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EXECUTIVE DOCUMENTS

PRINTED BY ORDER OF

THE HOUSE OF REPRESENTATIVES

DURING THE

FIRST SESSION OF THE THIRTY-FIFTH CONGRESS,

1857-'58.

IN FOURTEEN VOLUMES.

| | |
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| Volume 2..... | No. 2, parts 1, 2, and 3. |
| Volume 3..... | No. 11 to No. 20, except Nos. 13 and 17. |
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WASHINGTON:
JAMES B. STEEDMAN, PRINTER.
1858.



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OF THE

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REPORT

OF THE

COMMISSIONER OF PATENTS

FOR THE YEAR 1857.

ARTS AND MANUFACTURES.

IN THREE VOLUMES.

VOLUME I.

WASHINGTON:
JAMES B. STEEDMAN, PRINTER.
1858.

IN THE HOUSE OF REPRESENTATIVES,

April 28, 1858.

Resolved, That there be printed, for the use of the Members of the present House of Representatives, twenty thousand copies of the Mechanical portion of the Patent Office Report for the year 1857.

Attest:

J. C. ALLEN,

Clerk.

UNITED STATES PATENT OFFICE,

January 20, 1858.

SIR: As required by the 14th section of the act approved March 3, 1837, I have the honor to transmit herewith the Annual Report of this office for the year 1857, which I have to request may be laid before the Congress of the United States.

I have the honor to be, very respectfully, your obedient servant,

J. HOLT,

Commissioner of Patents.

Hon. JAMES L. ORR,

Speaker of the House of Representatives.

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REPORT
OF THE
COMMISSIONER OF PATENTS
FOR THE YEAR 1857.

UNITED STATES PATENT OFFICE,
January 20, 1858.

SIR: In compliance with the fourteenth section of the act entitled "An act in addition to the act to promote the progress of science and useful arts," approved March 3, 1837, I have the honor to submit the following report of the operations of this office during the year terminating the 31st of December, 1857.

No. 1.

| | |
|--|-------|
| Number of applications for patents..... | 4,771 |
| Number of patents granted (including designs, reissues, and additional improvements) | 2,910 |
| Number of caveats filed..... | 1,010 |
| Number of applications for extension of patents | 21 |
| Number of patents extended..... | 11 |
| Number of patents expired | 572 |

Of the patents granted, there were :

| | |
|---|-------|
| To citizens of the United States..... | 2,868 |
| To subjects of Great Britain..... | 24 |
| To subjects of France..... | 13 |
| To subjects of other foreign nations..... | 5 |

Total..... 2,910 •

The patents granted to citizens of the United States were distributed among the several States, Territories, &c., as follows :

| | | | |
|---------------------------|-----|-------------------------|-------|
| New York..... | 855 | Wisconsin..... | 31 |
| Massachusetts..... | 421 | Alabama..... | 27 |
| Pennsylvania..... | 314 | Georgia..... | 20 |
| Ohio..... | 235 | Louisiana..... | 20 |
| Connecticut..... | 161 | North Carolina..... | 14 |
| Illinois..... | 119 | Tennessee..... | 14 |
| New Jersey..... | 91 | South Carolina..... | 12 |
| Indiana..... | 60 | Mississippi..... | 11 |
| Virginia..... | 53 | Iowa..... | 11 |
| Maryland..... | 57 | Delaware..... | 10 |
| Vermont..... | 48 | California..... | 7 |
| Missouri..... | 44 | Texas..... | 5 |
| New Hampshire..... | 41 | Arkansas..... | 3 |
| Kentucky..... | 37 | Minnesota..... | 3 |
| Rhode Island..... | 36 | Kansas..... | 1 |
| Michigan..... | 35 | United States army..... | 2 |
| District of Columbia..... | 33 | | |
| Maine..... | 32 | Total..... | 2,868 |

Notwithstanding the rapid decline in the business of the office during the months of October, November, and December, the aggregate number of patents for the year exceeded those of 1856 by four hundred and eight. This regularly progressive augmentation, which from year to year has been so long announced, is due alike to the inherent and irrepressible energy of the national mind, and to the admirable system by which it is excited and fostered. That system wisely avoids the laxity of European laws, which grant patents, as of course, on all applications, upon payment of the fees, and leave their value to be subsequently tested by the impoverishing process of protracted litigation. As decidedly, on the other hand, does it eschew that stern, unsympathizing, distrustful temper, which would receive the inventor as a stranger beneath the roof of this magnificent edifice, which has been reared at once as a monument to his genius, and as a depository of the trophies of his labors. That better policy, which adopts the happy medium between these two equally pernicious extremes, and which, while welcoming the inventor as a friend and patron, in that frank and free conference with him enjoined by law, kindly and anxiously sifts from his invention its minutest patentable features, is a policy essentially American in its origin and aims, and must be inflexibly maintained in the administration of this office so long as it remains faithful to the high mission with which it is charged. The restless activity which has distinguished the inventive genius of the country during the past year has been confined to no class or pursuit. Alike from the walks of science, the workshops of the mechanic, and the broad lands of the husbandman, inventions have come thronging to this office, demonstrating how completely the national intellect is emancipated from the shackles of the past, and with what intense zeal it is pursuing that career of glory which is open before it. While every part of the field of invention has been

assiduously occupied, that relating to agriculture has proved most fruitful. Of the twenty-nine hundred and ten patents issued, four hundred and thirty-eight—cotton-gins, rice-cleaners, and fertilizers included—were for agricultural processes and implements. This is a most grateful feature in the year's operations; for, as the virtues of Cincinnatus have ever been found, like that illustrious patriot, at the plough, so every improvement in the arts and sciences, tending to develop the strength and advance the general prosperity of the tillers of the soil, is broadening and deepening those foundations on which, alike in calm and in storm, the republic must rely for its security.

The characteristics of the inventions of the past year have been decidedly utilitarian. But little attention seems to have been bestowed upon articles of mere luxury. The unceasing inquiry has been for agencies capable of yielding the largest amount of the elements of human comfort with the least possible expenditure of human labor. This is certainly a movement in the direction of the highest type of civilization; for until the masses of mankind shall have been relieved from the pressure of that ceaseless toil which renders life, in its weariness, but a reflection of the fabled tortures of Sisyphus, it will be in vain to expect, for the mental and moral nature of our race, more than the morning twilight of that development whose noonday splendors have been so long the dream and the hope of the philanthropist.

No. 2.

Statement of moneys received at the Patent Office during the year 1857.

| | |
|--|-------------------|
| Received on applications for patents, reissues, additional improvements, extensions, caveats, disclaimers, and appeals | \$182,250 00 |
| Received for copies, and for recording assignments | 13,882 01 |
| Total | 196,132 01 |

No. 3.

Statement of expenditures from the patent fund during the year 1857.

| | |
|--|-------------------|
| For salaries | \$82,711 23 |
| For temporary clerks | 43,236 80 |
| For contingent expenses | 47,107 58 |
| For payment to judges in appeal cases | 300 00 |
| For refunding money paid into the treasury by mistake .. | 206 50 |
| For refunding money on withdrawals | 38,019 98 |
| Total | 211,582 09 |

The above aggregates of receipts and expenditures accrued as follows:

| | In the 1st quarter. | In the 2d quarter. | In the 3d quarter. | In the 4th quarter. | Total. |
|---|------------------------|-----------------------|-----------------------|------------------------|--------------|
| Receipts | \$55,290 22 | \$60,783 08 | \$45,172 75 | \$34,886 04 | \$196,132 01 |
| Expenditures..... | 59,721 85 | 50,786 53 | 53,433 54 | 47,640 17 | 211,582 09 |
| Excess of expenditures over receipts | | | | | 15,450 08 |

The excess of the expenditures over the receipts of the past year admits of a satisfactory explanation. A large part of this excess is made up of \$9,234 58, paid in the month of January, 1857, for stationery, parchment, and books purchased in 1856, and which—as the parchment and stationery had been consumed in the current business of the office—were properly chargeable to that year. During the first three quarters the receipts exhibit an average per quarter of \$53,748; in the last quarter they suddenly declined to \$34,886, showing a deficit for that brief period, as compared with the average, of \$18,862. There is in this no evidence either of improvidence or of inability on the part of the office to maintain that self-sustaining character which it has always supported in legal estimation, and in fact. Had not the year 1857 been burdened with heavy pecuniary responsibilities belonging to 1856, and had the revenues continued for the last as during the previous quarters, instead of there being an excess of expenditure over the receipts, there would have been a surplus on hand of at least \$12,646. It is scarcely necessary to add that the abrupt falling off in the business, and consequently in the revenues of the office, commencing in September and continuing throughout the last quarter, was a consequence of that financial revulsion whose baleful influences have been felt in all the business relations of life. Happily, this calamity, so disastrous for the moment, is rapidly passing away, and the return tide of prosperity, so confidently anticipated, will, no doubt, be fully shared by this office.

No. 4.

Statement of the condition of the patent fund.

| | |
|--|-------------|
| Amount to the credit of the patent fund, January 1, 1857.. | \$55,169 54 |
| Amount paid in during the year..... | 196,132 01 |
| Total | 251,301 55 |
| Deduct amount of expenditures during the year..... | 211,582 09 |
| Leaving in the treasury, 1st of January, 1858..... | 39,719 46 |

No. 5.

Table exhibiting the business of the office for seventeen years, ending December 31, 1857.

| Years. | Applications filed. | Caveats. filed. | Patents issued. | Cash received. | Cash expended. |
|--------|---------------------|-----------------|-----------------|----------------|----------------|
| 1841 | 847 | 312 | 495 | \$40,413 01 | \$23,065 87 |
| 1842 | 761 | 291 | 517 | 36,505 68 | 31,241 48 |
| 1843 | 819 | 315 | 531 | 35,315 81 | 30,776 96 |
| 1844 | 1,045 | 380 | 502 | 42,509 26 | 36,344 73 |
| 1845 | 1,246 | 452 | 502 | 51,076 14 | 39,395 65 |
| 1846 | 1,272 | 448 | 619 | 50,264 16 | 46,158 71 |
| 1847 | 1,531 | 533 | 572 | 63,111 19 | 41,878 35 |
| 1848 | 1,628 | 607 | 660 | 67,576 69 | 58,905 84 |
| 1849 | 1,955 | 595 | 1,070 | 80,752 78 | 77,716 44 |
| 1850 | 2,193 | 602 | 995 | 86,927 05 | 80,100 95 |
| 1851 | 2,258 | 760 | 869 | 95,738 61 | 86,916 93 |
| 1852 | 2,639 | 996 | 1,020 | 112,056 34 | 95,916 91 |
| 1853 | 2,673 | 901 | 958 | 121,527 45 | 132,869 83 |
| 1854 | 3,324 | 868 | 1,902 | 163,789 84 | 167,146 32 |
| 1855 | 4,435 | 906 | 2,024 | 216,459 35 | 179,540 33 |
| 1856 | 4,960 | 1,024 | 2,502 | 192,588 02 | 199,931 02 |
| 1857 | 4,771 | 1,010 | 2,910 | 196,132 01 | 211,582 09 |

It will be seen from this condensed exhibit that, with the exception of the very slight and momentary check experienced in the last quarter, the increase in the business of the office has been steady and uninterrupted. The inventive genius of the country, great as have been its efforts and attainments, has manifested none of the languor of exhaustion, nor testified any inclination for repose. Each discovery made, like a fire kindled in a dark place, while enlarging the horizon of science, has laid bare yet other and wider fields, to be traversed by its ever brightening pathway. In reviewing the triumphs of invention and discovery in every department of the arts and sciences for the last three quarters of a century, and in marking their beneficent influences in softening the asperities and exalting the dignity of human labor, there is abundant cause for heartfelt exultation. The blessings thus diffused are as universal as the air we breathe, and amid all the changes, social and political, to which we may be exposed, they will still endure, or will pass away only to give place to some higher and nobler fruit of the same indomitable genius which produced them. But while there is thus in the past so much to excite our pride, there is in the future yet more to excite our hopes. If that future is to be measured by the strides of that past, rapid as has been our advancement, it is but reasonable to infer that we have scarcely crossed the threshold of the temple of human knowledge; and magnificent as may seem the trophies we have treasured up, it would hardly be an exaggeration to say—to borrow the thought of the great Newton—that we have gathered as yet but a few pebbles

and shells on the shore of that ocean of truth whose depths still lie unexplored before us.

With as much care and with as near an approach to strict accuracy as was possible, the table which follows has been prepared for the purpose of presenting a comparative view of the progress of inventions for a single year in the United States and in the other nations therein designated.

| Country. | Patents granted in 12 months. | Population. |
|---------------------|----------------------------------|--------------|
| France | 6, 187 | 35, 781, 628 |
| United States | 2, 910 | 23, 191, 918 |
| Great Britain | 2, 115 | 27, 511, 447 |
| Belgium | 1, 413 | 4, 426, 202 |
| Austria | 724 | 36, 514, 466 |
| Sardinia | 185 | 4, 368, 972 |
| Saxony | 116 | 1, 828, 732 |
| Canada | 100 | 1, 842, 265 |
| Hanover | 49 | 349, 958 |
| Prussia | 48 | 16, 923, 721 |
| Bavaria | 45 | 4, 519, 546 |
| Netherlands | 43 | 3, 203, 232 |
| Sweden | 32 | 3, 482, 541 |
| Wurtemberg | 25 | 1, 733, 263 |
| Russia | 24 | 69, 660, 146 |
| Brazil | 4 | 4, 750, 000 |

As the strict examination of all inventions sought to be patented, which forms so prominent a feature in our system, does not prevail in the transatlantic governments referred to, a more correct estimate would be arrived at by comparing, not the patents issued, amounting to twenty-nine hundred and ten, but the number of applications, four thousand seven hundred and seventy-one, with the patents granted by the foreign governments during the same period of time. It is known that at least eight hundred and fifty-three, probably more, of the Belgian patents, were those of France and other foreign countries re-issued. Notwithstanding the fetters flung by imperial hands athwart the tides of French genius, they still obey the heroic impulses imparted to them by the revolution of 1790, and continue with equal daring and ease to change the forms of government and the fashion of the minutest articles of trade. It is in the light of the evening crepuscule of that revolution that French science still pursues its sublime career. In Russia, whose government is verging upon the thousandth year of its existence, in 1852, 1853, and 1854, but ninety-seven patents were issued, of which fifty-six only were granted to natives of the empire, being an average of about nineteen per annum, in a population of sixty-nine millions. For twelve months, ending November, 1857, the patents granted amounted to twenty-four, of which but thirteen were to natives of the country. Whilst that empire and the United States are the antipodes of each other in their political organizations, so do they present, developed in striking contrast, the results to which their re-

spective political systems tend. That the intrepid and quenchless spirit of inquiry which seems inseparable from every throb of American life, and which, from year to year, is filling this office with the memorials of its achievements, is one of the boons of our republican institutions, may be affirmed without the hazard of contradiction. As the soil, when exposed to the sunshine and the shower, starts into life the germ of every flower and shrub and tree lurking beneath its surface, so acts the human soul when stimulated and kindled by the influences of well regulated political freedom. The above table, in its every line and lineament, palpitates with the demonstration of this great, and for us, most gratifying truth. In examining it, passing from our own favored land, we can but note that, as the light of liberty waxes dimmer and dimmer, so does the inventive genius flag and dull apace, until finally, amid the darkness of the political night which broods over eastern lands, it is utterly extinguished. Upon the mountain slopes of the far East may be seen narrow winding paths, in which, for uncounted centuries, the burden-bearing camel has been treading on precisely the same spot, until now his foot-print, distinct and deep, is worn far into the solid rock—a fitting symbol of the oriental mind, beneath the crushing incubus of oriental despotism.

Subjoined to this report will be found the usual catalogue of patents which expired during the past year; also, a classified summary of those issued during the same period, together with an alphabetical list of the patentees, followed by the drawings and by abridgments of the specifications, which under our laws not only illustrate the patent, but are part and parcel of it.

While the statutes organizing and regulating the action of this office constitute, perhaps, the best system of patent laws ever devised, still the experience of the last twenty years has disclosed various imperfections in their provisions, the more prominent of which, with the remedies proposed, I deem it proper, at this time, briefly to urge upon the attention of Congress.

In applications for the extension of patents and in interference cases a wide range of inquiry into matters of fact is often essential to the ends of justice. The existing laws furnish no means for compelling the attendance of witnesses, nor for obliging them to testify upon such issues. The interests bound up with these investigations are frequently of the greatest magnitude; and, as a consequence, refractory or mercenary men, availing themselves of this omission in the law, have refused to appear or give their depositions, except upon the payment of the most exorbitant sums by the parties claiming their testimony. Cases of this character, while working the most cruel hardship to individuals, have tended to bring the administration of the government into discredit, if not into contempt. No reason is perceived why the process of subpoena, freely allowed to all litigating their interests in the courts of the country, shall be withheld from the parties to these important and complicated controversies.

Whatever might be the capabilities of the Commissioner for physical and mental labor, it would be impossible for him to discharge the administrative duties of his office, and hear, in person, all the appeals brought before him from the decisions of examiners. The usage has

hence grown up of referring the investigation of most of these appeals to a board, constituted for the occasion, consisting of two or more examiners, who make their report to the Commissioner. As these boards lack permanence, and from necessity, indeed, have been constantly changing, without a critical examination of each report by the Commissioner, (which is not practicable,) uniformity in action and in the assertion of principle cannot be maintained. To prevent in future that conflict, which has been so often deplored in the past, it has been recommended that there shall be appointed a permanent board of three examiners-in-chief, who shall be charged with the duty of hearing and determining upon all appeals from the judgment of the primary examiners. Such a tribunal would, no doubt, attain the end sought, and the members of it (should their appellate duties not fully occupy their time) could, by the Commissioner, be assigned labor in the classes requiring such assistance with much advantage to the public service.

In consequence of requiring models in applications for designs—a class of cases in which, for purposes of illustration, they are rarely needed, and in consequence of the retention by the office of the models in all rejected applications, the accumulation has been rapid, and threatens to prove a serious public inconvenience. A large number of these models, which occupy so much space in the building, are admitted to be valueless, and were they removed, and the drawings and specifications alone retained, no prejudice to any interest, public or private, could ensue. Should Congress think proper to invest the Commissioner with a discretionary authority over them, its judicious exercise would accomplish results much to be desired.

It will be observed, that of the \$211,582 09 set forth as the aggregate expenditures of this office for the year 1857, \$38,019 98 consisted of fees returned on applications withdrawn after examination and rejection. The necessity of a change in this feature of the existing law has been heretofore expressed, and is still felt with increasing force. Did the patent constitute the consideration for which the fee of thirty dollars is paid, it would be but reasonable that this sum, or a part of it, should be returned upon the abandonment of the claim. Such, however, is not the case. The consideration of the patent is the surrender of the invention to the public at the expiration of the fourteen years for which the monopoly is granted. The thirty dollars forms the compensation (and it is no more than a just one) for the labor bestowed by the office in the preparation and examination of the application. When, then, this has been performed, it is neither just nor expedient that the well-earned compensation for it should, in whole or in part, be withheld. A tariff of fees, which, while dividing the services required, provides that they shall be paid for, step by step, as they progress, has been proposed, and, it is hoped, will be favorably considered by Congress. This would be alike agreeable to the inventor and to the office, protecting, as it would, the former from the oppression of paying for any services not in fact rendered, and the latter from the injustice of performing any labor for which it is not remunerated.

It should be mentioned that, within the year just closed, applica-

tions have been filed for letters patent for several inventions alleged to be valuable, and to have been made by slaves of the southern States. As these persons could not take the oath required by the statute, and were legally incompetent alike to receive a patent and to transfer their interest to others, the applications were necessarily rejected. The matter is now presented to the consideration of Congress, that, in its wisdom, it may decide whether some modification of the existing law should not be made in order to meet this emergency, which has arisen, I believe, for the first time in the history of inventions in our country.

The defects developed by the practical operation of the laws intended to secure the rights of inventors suggest the propriety of their careful revision. At the expiration of his patent the inventor is bound to surrender to the public his invention, the fruit, it may be, of many years of anxious toil; and from this undertaking there is no possibility of escape. As an equivalent for this surrender, the government stands pledged to insure to him the full and peaceful fruition of his monopoly during its continuance; and this pledge constitutes one of the most solemn obligations of law and of honor. The compact thus entered into, distinct in its import, and reciprocally binding in its stipulations, is based upon the highest considerations recognized by law, and ought to be executed by the government with that scrupulous fidelity which should ever distinguish the strong when dealing with the weak. While, however, this species of property yields to none other in its national importance, and surpasses all others in the amount which it pays for the legal safeguards thrown around it, it is notorious that it enjoys but a precarious and incomplete protection. The more prominent of the causes conducing to this result are the helplessness of inventors as a class; the peculiarly exposed character of their interests to be defended; the universal impatience of legal restraints, as manifested in that lawlessness which so sadly mars the body of the times in which we live; and, lastly, the unskilful adjustment of subsisting instrumentalities to the performance of those duties of guardianship which the government has assumed upon itself. If the law relaxes the vigilance of its watch over the homestead of the citizen, he can take his stand at his own threshold, and with his own right arm beat back those who would invade it; but the rights of the inventor are coextensive with the limits of the republic, and may be assailed and despoiled at a thousand points in the same moment of time. The eyes of Argus would not suffice to discover, nor the arms of Briareus suffice to resist, the assaults of so omnipresent a foe as it is his lot to encounter. If, then, the faith which the government has plighted with him fails, he is utterly without shelter. This is no sketch of the imagination. Again and again have inventors, impoverished in fortune and broken in spirit, come to this office seeking the extension of their patents, and demonstrating by testimony that the fourteen years which should have been devoted to reaping the harvest of their labors were worse than wasted in harassing and ruinously expensive litigation in defence of their patented privileges. The insolence and unscrupulousness of capital, subsidizing and leading on its mercenary minions in the work of pirating some valuable invention held by

powerless hands, can scarcely be conceived of by those not familiar with the records of such cases as I have referred to. Inventors, however gifted in other respects, are known to be confiding and thriftless; and being generally without wealth, and always without knowledge of the chicaneries of the law, they too often prove but children in those rude conflicts which they are called on to endure with the stalwart fraud and cunning of the world. It would certainly be practicable to affix a limit to this oppressive litigation, at least to that feature of it which calls in question the validity of the patent, while the sense of public justice would not be shocked by inflicting something more than a verdict in damages on wanton offenders of this class. It is admitted that the subject is embarrassed with difficulties, but it is believed that they are not insuperable. It is a principle of criminal jurisprudence that the penalty shall be proportioned, in its severity, to the temptations and facilities which exist for the commission of the crime. The principle is a sound one, and would justify legislation of unusual rigor in behalf of the down-trodden interests of inventors.

The existing laws authorize the granting of patents only to original inventors, their representatives and assignees. While the wisdom of the general principle thus asserted is undeniable, still certain facts connected with the condition of the arts and sciences in Europe would justify the inquiry, whether, if compatible with the Constitution, a solitary exception to the rule might not be advantageously allowed. It is well known that, for a long period of time, manufacturing processes of great value have existed beyond the Atlantic, but which have neither been patented nor described in any printed publication, nor introduced into public use. They have been and are still employed within the walls of well guarded manufactories, whose operatives, in entering the service, assume upon themselves obligations of secrecy. Thus, from generation to generation, a knowledge of these useful arts is clandestinely transmitted, and the world is oppressed by the burden of perpetual monopolies. The opinion is entertained that, if our laws could be so modified as to extend the shelter of a patent to these arts and inventions, by whomsoever revealed and introduced, many of them would find their way into the United States, and, perhaps, among the number, the most important of all, the hitherto concealed process for the manufacture of Russia sheet iron. That their introduction would be a national service, for which it would be competent to make a national remuneration, will hardly be controverted. Whether the constitutional scruples which exist can be so far overcome as to give to this remuneration the ordinary, and certainly the most effective form—that of letters patent—is a question which the magnitude of the interests involved renders worthy of the serious consideration of Congress.

While the fee paid for a patent by an American citizen is but thirty dollars, the sum of five hundred dollars is exacted from a British subject, and three hundred from the citizens and subjects of other foreign governments. This harsh, and, seemingly unwise, discrimination has formed the subject of earnest remonstrance on the part of my predecessors; but, weighty as are the objections which have been urged against its continuance, they have failed to attract the favorable notice

of Congress. If the existing law can be regarded as having been adopted in a spirit of retaliation, its framers totally misconceived the European policy to which it was intended to respond. Careful inquiry enables me to state that, with the exception of Prussia, ours is the only nation known to distinguish, in granting patents, between the native born and foreign inventor. It is true, that the English, French and other transatlantic governments require the payment of patent fees, apparently enormous and oppressive, as compared with those paid here by American citizens; but exorbitant as these fees may seem, they are demanded alike of all, natives and foreigners. With those nations the patent laws are but measures of revenue; and as the administration of their peculiar political institutions involves the outlay of vast treasures, their revenue systems must be upon a correspondingly gigantic scale. With such governments, such measures may, perhaps, plead an absolute financial necessity in their justification, and they certainly carry with them not the slightest approach to that breach of national comity which our legislation appears so strangely intended to rebuke. But upon what principle can it be maintained that the government of the United States, boasting of the simplicity and cheapness of its administration, and of its entire disenthralment from the political burdens of the Old World, shall imitate this solitary feature of transatlantic taxation? It may occur to those who do not look beyond the surface of this provision, that the exaction, being made upon the foreigner, is therefore a national gain; but this is manifestly a delusion. It is incontestably true, that, though paid by the foreigner in the first instance, on the issuing of his patent, he is ultimately reimbursed from the purse of the native consumer. Besides, of all taxes, it is the most odious; being a tax on knowledge, and upon the highest forms and noblest aims of human philanthropy. If other governments are so insensible to the dictates of an enlarged public policy, and so wanting in sympathy with the governed as to prefer, or so unfortunate as to feel constrained to resort to, imposts thus embarrassing the inventive genius of the age, shall we so far violate the convictions inseparable from our political faith and nurture as to follow in their footsteps? The people of the United States have a deep interest in all useful inventions, wherever and by whomsoever made, and their passage from land to land should be as free as the winds and sunshine of heaven.

Near half a century ago the government of the United States inaugurated the principle of reciprocity in the commercial intercourse of nations. It invited the concurrence of all other governments by offering to place their citizens and subjects on the same footing with the citizens of this country, provided like advantages were by them extended in return. With one exception, this principle is now engrafted upon every treaty regulating our commerce with Europe; and in introducing a new and brilliant epoch in our history, it has laid the axe to the root of that jealousy of strangers, so prevalent among the benighted Asiatics, and which, wherever found, is recognized as a lingering badge of barbarism. It is asked that this doctrine, so just in itself, and of which we are so justly proud, shall be embodied in our patent laws. Every European government, with the single exception

stated, has placed American citizens on a footing of perfect equality with its own subjects, so far as its system of patent laws is concerned. In the presence of such a fact appealing to us, to uphold longer this obnoxious discrimination would be to insist that the strictly local and domestic legislation of other nations shall be adjusted to meet our peculiar views, or, what is yet more unreasonable, that the governments of those nations shall accord to our citizens privileges which they deny to their own. While recognizing it as our duty to be courteous and liberal, even upon the arena of trade, where human selfishness is most prone to prey upon the stranger, can we, without the grossest inconsistency, refuse to be so, on that broader and more elevated theatre of action, whose themes affect the advancement and happiness of the race, and where, at every moment, we are forced to acknowledge that the gain of other nations is our gain, and their loss is necessarily ours also?

Regarded from the lowest point of view, its bearing upon the finances of this office, the feature of the act of 1836, under discussion, has proved a failure. Excluding, as it does, multitudes of inventions which would otherwise be introduced, no doubt is entertained but that it yields a smaller amount of revenue than would the more moderate schedule of fees proposed in its stead.

The colonial government of Canada, treating, as is supposed, the act of 4th July, 1836, as aggressive in its spirit, responded by absolutely excluding American citizens from the benefits of its patent laws. In consequence, that vast country, affording one of the richest harvests of the world for the inventive genius of our fellow-citizens, remains closed against them. The people of Canada are scions of the same stock from which sprang the founders of our republic. They speak the same language, worship before the same altars, have the same forms of social and domestic life, and draw the inspirations alike of their literature and of their laws from the same high sources with ourselves. Along the borders of eight of the States of our confederacy, with but narrow intervening lakes and rivers, their territory extends; a colony, it is true, in its political aspects, but an empire in the greatness of the future which is dawning upon it. When we examine yet more closely the character and condition of that country, and realize how gigantic are the public works which pervade it, as so many pulsating arteries of trade and of travel, how exhaustless are its agricultural and mineral resources, and the elements of its manufacturing power, and how rapidly, with every wave of European immigration that breaks on our shores, its population is increasing, it is difficult to resist the conviction that we have everything to gain and nothing to lose by cultivating with these, our nearest neighbors, the most cordial and intimate relations. In 1853 the imports into Canada from the United States amounted to \$11,782,145, and the imports into the United States from Canada, to \$8,926,360. Under the benign influences of the reciprocity treaty which went into operation on the 11th September, 1854, the commerce between the two countries has rapidly increased, so that in 1856 the imports into Canada from the United States swelled to \$22,704,508, and the imports into the United States from Canada, to \$17,879,752. A more complete vindication of this

act of enlightened statesmanship than such a result presents could not be desired by its most earnest advocates. The observance of a lofty and generous policy in our intercourse with other nations must ever bear such fruit as this. There is every reason to believe that no disposition is felt on the part of the people or of the political authorities of Canada to continue longer the unpleasant and embarrassing relations with the United States to which their respective systems of patent laws have given rise. The bare introduction of a bill into the last Congress, proposing a repeal of the provision of the act of 1836, under examination, was at once followed by a corresponding movement on the part of the Canadian government, having for its object a removal of the existing restrictions upon American inventors. If this movement failed of its consummation, I am well assured it was only because the bill referred to failed to become a law. The highest considerations of public interest seem to require that Congress, regardless of mere national punctilio, shall frankly use its utmost endeavors to open to American inventors this attractive and remunerative field, from which, by an unhappy course of legislation, they have been so long excluded. Whether the Canadian estimate of the act of 1836 be just or not, it is certain that from its foundation the government of the United States has been unceasing in its efforts to liberalize and elevate the intercourse of nations, and that, in view of its antecedents, it can well afford to take the initiative and offer an example of liberality to the world, as it is unquestionably beneath its dignity and mission to follow an example of an opposite character, by whatever government or people it may be set.

The Patent Office, silent and unobtrusive in its course, connecting itself with none of the agitations of the day, and demanding nothing from the public treasury, asks only the assent of the national legislature to such an arrangement of its instrumentalities as shall secure the highest possible efficiency to its action. Beyond its mission of beneficence to all, it has no ambition to gratify, no triumph to achieve. The well-springs of its life are fed by contributions from the benefactors of our race; and it is in their name that this appeal, so often made and so long unheeded, is now respectfully, but most earnestly, renewed.

J. HOLT.

HON. JOHN C. BRECKINRIDGE,
Vice President of the United States.

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR INVENTIONS
AND DISCOVERIES HAVE EXPIRED DURING THE YEAR 1857.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|---|--------|
| 3077 | Adams, William, and Artemus Hammond. | Iron, &c., punching holes in, machine for. | 2 |
| 3291 | Adams, William, and Artemus Hammond, assignees of Artemus Hammond. | Windlass, ship's..... | 12 |
| 2981 | Alden, Albert..... | Pen-holders..... | 18 |
| 2912 | Allen, Ethan..... | Engraving, machines for..... | 18 |
| 3145 | Allen, Horatio..... | Pipes, metal, determining the thickness of. | 2 |
| 3348 | Allen, Horatio..... | Stop-cocks in pipes under hydrostatic pressure, tapping and inserting. | 11 |
| 3315 | Allen, Horatio..... | Stops, elastic water, for checking the force or momentum of water in pipes. | 11 |
| 3225 | Anderson, J. J..... | Stoves, cooking..... | 5 |
| 3049 | Austine, George..... | Threshing-machines..... | 1 |
| 3268 | Armstrong, Martin N..... | Knives and forks, cleaning and polishing. | 2 |
| 3146 | Ashard, William K..... | Matches, friction..... | 4 |
| 2926 | Atwater, Stephen..... | Steam generator, portable..... | 5 |
| 2978 | Atwood, Charles..... | Hooks and eyes for fastening garments... | 21 |
| | Avery, Latham Y. (See Rhess Griffin.) | | |
| 3152 | Aylesworth, Chadiah..... | Water-wheels..... | 11 |
| 3139 | Baer, Charles, and John Goullart. | Manure making..... | 1 |
| 5957 | Bain, Alexander..... | Electricity, copying surfaces by..... | 8 |
| 3279 | Baker, Abraham..... | Water-wheels, inclined..... | 11 |
| | Ball, Sheldon X. (See George Eekler.) | | |
| 3371 | Ballard, Charles A..... | Chairs, rocking..... | 17 |
| | Bancroft, Edward. (See Nathaniel Miller.) | | |
| 3026 | Banning, Edmund P..... | Trusses..... | 20 |
| 2996 | Barber, Charles E..... | Shearing diamond figures of cloth, &c., method of. | 3 |
| | Barbour, Horace. (See Gleason, John and H. C., and White.) | | |
| 2905 | Barnes, F. M..... | Flax and hemp, breaking..... | 3 |
| 3165 | Bartholomew, Daniel..... | Clapboards, sawing, machines for..... | 14 |
| 3253 | Bartlett, Nelson..... | Pens, fountain..... | 18 |
| 3280 | Barton, Gardner, jr..... | Doors, gates, &c., closing apparatus for.. | 9 |
| 3302 | Bates, Stephen..... | Baths, shower..... | 20 |
| 3099 | Beackley, John W..... | Trunks, travelling..... | 16 |
| 3219 | Beaman, William..... | Brooms, winding wire or twine on..... | 17 |
| 2982 | Bean, Benjamin W..... | Cloth of all kinds, sewing with a running stitch. | 3 |
| 2944 | Beardsley, Backus A..... | Bark mill..... | 13 |
| 3310 | Beckwith, Amasa B..... | Water-wheels..... | 11 |
| 3001 | Beebe, Lyman and James H..... | Straps, coupling, method of, as a substitute for a buckle. | 16 |
| 3195 | Belson, Richard W..... | Hinges, butt, casting..... | 2 |
| 3113 | Belson, Richard W..... | Stoves..... | 5 |
| 3244 | Bentley, Charles W..... | Boilers, tubular, constructing, for generating steam. | 6 |
| 3040 | Benton, H. P..... | Lamps, lard..... | 5 |
| 2940 | Bingham, James..... | Buckles, suspender..... | 21 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|--|--------|
| 3259 | Black, William | Ploughs..... | 1 |
| 3017 | Blake, Philos, Eli W., and John A. Blake, William. (See Henry N. Hooper, &c.) | Button, plate turn, for fastening cupboard and other doors. | 2 |
| 3006 | Blanchard, Thomas..... | Turning or cutting irregular forms | 14 |
| 2925 | Boardman, William D | Hone or strap, razor..... | 21 |
| 3118 | Bookman, Thomas..... | Smut-machines | 1 |
| 2933 | Botta, Charles T..... | Straw-cutters | 1 |
| 3267 | Bourne, Henry | Gold washing, machine for | 2 |
| 2965 | Boynton, Charles B | Stoves, air-heating | 5 |
| 3174 | Boynton, John | Carding-engine..... | 3 |
| 2920 | Brandreth, Benjamin | Vegetable extracts, making..... | 4 |
| 3249 | Briggs, Cornelius | Extension tables | 17 |
| 2956 | Brooks, Ebenezer | Striker, blacksmiths', for forging iron.... | 2 |
| 3241 | Brown, Benjamin H | Steam engines, horizontal pistons and slide valves for. | 6 |
| 2934 | Brown, Edwin | Piano-fortes | 18 |
| 3132 | Brown, Lorenzo D | Tuyeres..... | 2 |
| 3207 | Brown, Thomas..... | Smut-machines..... | 1 |
| 3324 | Bruce, David, Jr..... | Type-casting machines | 18 |
| 3158 | Bryan, John P | Cane-cutters..... | 1 |
| 3151 | Bryan, John P | Cane-covers | 22 |
| 3108 | Buck, Henry A..... | Smut-machines | 1 |
| | Bucklin, James C. (See Wm. Tallman.) | | |
| 3236 | Bullock, William..... | Presses, cotton and hay..... | 12 |
| 3261 | Burden, Henry | Horse-shoes, machine for making..... | 2 |
| 3320 | Burrall, Thomas D | Ploughs, wheel..... | 1 |
| 3002 | Bush, Oliver H. and Charles H. | Gate, liquor | 11 |
| 3307 | Butler, Henry T., assignee of Laban Eddy. | Stoves, cooking | 5 |
| 3205 | Caldwell, John..... | Water-wheels | 11 |
| 3391 | Calvert, Francis A | Wool, combing..... | 3 |
| 3120 | Calvert, Francis A | Wool, picking and separating burrs from; also, applicable to ginning cotton. | 3 |
| | Calvert, Wm. W. (See George W. Lyman.) | | |
| 3122 | Carr, William | Bread-making, constructing machines for. | 17 |
| | Caraley, William. (See George W. Towle.) | | |
| 16 | Chaffee, Edwin M..... | Caoutchouc, application to cloths, &c.... | 4 |
| 3067 | Chambers, Josias | Presses, cotton..... | 12 |
| 3238 | Chickering, Jonas | Piano-fortes | 18 |
| 3122 | Chickering, Jonas, assignee of Rufus Perkins. | Hinges for piano-fortes, &c | 2 |
| 3255 | Clark, Oliver, and Wm. D Hillis. | Hoes to handles, attaching | 1 |
| 3009 | Clark, Patrick J | Lamps, lard | 5 |
| 2974 | Claude, Dennis, Jr..... | Grain-separators | 1 |
| | Clezy, Geo. (See J. S. Eastman.) | | |
| 3277 | Clow, Lewis E..... | Tuyeres..... | 2 |
| 3140 | Clowes, William | Bedsteads, sofa | 17 |
| 3191 | Cole, Ezekiel, administrator of Elijah Cole. | Electrifying-machine | 8 |
| 3337 | Coleman, John | Smut-machines | 1 |
| 3131 | Collins, Charles, assignee of James Pilbrow. | Steam engine, inlet reacting rotary, improvements in the, and in the manner of connecting it with machinery to be propelled. | |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|---|--|--------|
| 2995 | Collins Manufacturing Company, assignee of Elisha K. Root. | Steel tempering..... | 2 |
| 3185 | Colvin, Robert K..... | Hydrants, construction of..... | 11 |
| 3066 | Concklin, John C..... | Straw-cutters..... | 1 |
| 3004 | Cook, Harris..... | Net-gill, for catching fish..... | 22 |
| 3314 | Cooper, Alpheus..... | Stoves, cooking..... | 5 |
| 3236 | Coover, William..... | Pencils, tailors' marking..... | 18 |
| 2968 | Cope, Nathan..... | Steam engines, high pressure, mode of heating the supply water and carrying off the escape steam in..... | 6 |
| 3389 | Corlias, George H..... | Sewing, machine for..... | 16 |
| 3030 | Cornelius, Robert..... | Lamps, lard..... | 5 |
| 3028 | Cornelius, Robert..... | Lamps, lard, with argand burners..... | 5 |
| 3031 | Cornelius, Robert..... | Oil feeders..... | 5 |
| 3057 | Coulter, John..... | Looms, mode of delivering warp in..... | 3 |
| | Cox, David B. (See Elias John- son.) | | |
| | Crawford, A. B. (See H. Hizer.) | | |
| 2979 | Creed, William..... | Wheels, railroad car, constructing..... | 10 |
| 3209 | Culp, George W. D. & Joseph | Winnowing machines..... | 1 |
| 3062 | Cunningham, R. P..... | Looms, power, mode of throwing shut- tles in..... | 3 |
| | Curran, David. (See Philip Ha- vill.) | | |
| 2933 | Curtis, John..... | Stoves, cooking..... | 5 |
| 3114 | Curtis, Samuel W..... | Clapboards, beveling the ends of..... | 14 |
| 2939 | Custer, Jacob B..... | Watches..... | 8 |
| | Dakin, Samuel D. (See Ruther- ford Moody.) | | |
| 3082 | Davies, Thomas A..... | Hydrants..... | 11 |
| 3015 | Davis, Daniel, jr..... | Gilding, silvering, &c., in dead colors.... | 18 |
| 3089 | Dayoll, William C..... | Speeder, double speeder, or fly frame, used in roving cotton, &c..... | 3 |
| 2942 | Day, George L..... | Shingles, sawing, constructing machine for. | 14 |
| 3134 | De Crony, Nicolas H. I. F. Comte. | Steam engine, rotary, also applicable to pumps..... | 6 |
| 3148 | Dederick, Levi..... | Hay presses..... | 12 |
| 3293 | Delaney, William..... | Smut and garlic machines..... | 1 |
| 3065 | Dennis, Jonathan, jr..... | Hats and bonnets..... | 3 |
| 3365 | Detmold, Christian E..... | Boilers, steam, &c., effecting combus- tion in furnaces and flues of..... | 6 |
| 3176 | Detmold, Christian E..... | Furnaces, construction and heating of, for all kinds of metallurgic operations..... | 2 |
| 3297 | Dodd, Robert J..... | Bougies, for strictures..... | 20 |
| 2985 | Dodge, Jonathan..... | Teeth, setting, artificial..... | 20 |
| 2986 | Dofier, George..... | Bee-hives..... | 1 |
| 3734 | Donisthorpe, George E..... | Wool, combing..... | 3 |
| 2973 | Dougherty, John..... | Constructing canal boats, so that they can be transferred on railroad cars..... | 7 |
| 3285 | Douglas, Beriah..... | Propelling vessels, endless chain paddles for..... | 7 |
| 3272 | Douglas, Beriah..... | Salt, crystallizing..... | 4 |
| 3056 | Downs, John..... | Baskets for catching eels..... | 22 |
| 2935 | Downing, Frederick..... | Loom, power, for weaving plain cloth.... | 3 |
| 3340 | Drake, Eli P..... | Boot crimps..... | 16 |
| 3702 | Drayton, Thomas..... | Silvering looking-glasses..... | 4 |
| | Dudley, James B. (See Carlos G. Pressey.) | | |
| 3202 | Duff, William..... | Boilers, steam, safety valves for..... | 6 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|---|---|--------|
| 2971 | Dumont, William..... | Smut-machines..... | 1 |
| 2903 | Dunham, Henry R..... | Stop-cock for hydrants..... | 11 |
| 3444 | Dunn, Arthur..... | Soaps and oils, purifying..... | 4 |
| 3080 | Dutton, John..... | Ice, accumulating..... | 22 |
| 3266 | Eastman, Joel S. (assignee of George Cleary.) | Ploughs..... | 1 |
| 3199 | Eaton, William, jr..... | Threshing-machines..... | 1. |
| 3296 | Ecklee, George, and Sheldon X. Ball. | Tailors' measures..... | 21 |
| | Eddy, Laben. (See Henry T. Butler.) | | |
| 3372 | Eichar, Peter..... | Ploughs, double..... | 1 |
| 3335 | Eisenbrandt, Christian H..... | Coffins to be used in cases of doubtful death | 22 |
| 3295 | Elliot, Abial..... | Cannon balls, or shot, bomb shells, &c., mode of forming moulds for casting. | 19 |
| 3376 | Ellis, Charles..... | Spring, door, for closing doors..... | 2 |
| 3053 | Elmendorf, Reuben..... | Stoves..... | 5 |
| 3385 | Elsegood, William H..... | Boots and shoes, soles of..... | 16 |
| 3269 | Ely, Theodore..... | Burrs, cleaning, from wool, and seed from cotton. | 3 |
| 3138 | Emmitt, Pitner..... | Stoves, cooking..... | 5 |
| 3088 | Engle, William, and M. G. Kinney. | Smut-machines..... | 1 |
| | Esteale, John. (See Jacob Stroop.) | | |
| 3303 | Evarts, Henry H..... | Meat-cutters..... | 17 |
| 3129 | Everett, Horace..... | Propellers, submerged..... | 7 |
| 3186 | Eversole, Elijah H. and Cyrus .. | Steam-engine, pistons and stuffing-boxes of. | 6 |
| 3367 | Fahrney, Samuel..... | Garlic-machines..... | 1 |
| 3105 | Fairbanks, Thaddeus..... | Dust, metallic particles, &c., produced during the operation of grinding, method of removing or discharging the. | 2 |
| 3100 | Fairbanks, Thaddeus..... | Flues, furnaces, &c., machine for creating draught in. | 5 |
| 3175 | Farquhar, George..... | Scythe speed..... | 1 |
| 3072 | Farrell, A. D..... | Bedsteads, sofa..... | 17 |
| 3361 | Farrior, David, and D. P. J. Murphy. | Loom, weaving..... | 3 |
| 3292 | Faulkner, Peter..... | Vegetable elixir, for the cure of bronchitis, &c. | 4 |
| 3059 | Ferrel, William..... | Grate-bars..... | 5 |
| 3338 | Ferren, Ebenezer..... | Steam-engine, rotary..... | 6 |
| 2911 | Flannigan, Andrew..... | Marine railway..... | 9 |
| 3166 | Fletcher, Hannibal A..... | Yarn, sizing, by steam..... | 3 |
| 2954 | Forbes, Horace D..... | Constructing steam and other boats, &c., to prevent them from sinking when they come in collision with snags, saw-yers, &c. | 7 |
| 3107 | Forbes, Horace D..... | Steamboats, &c., bailing wheel for raising water from the hold of. | 7 |
| 3355 | Foster, William..... | Plane-stock, cast iron..... | 14 |
| 3252 | Foster, William..... | Veneers, cutting..... | 14 |
| 2994 | Fox, Gurdon..... | Furnaces, air-heating..... | 5 |
| 3081 | Frack, John..... | Glass, cooling and annealing ovens for .. | 15 |
| 3127 | Fraser, John..... | Seals, notarial..... | 12 |
| 3181 | French, Raymond..... | Augers..... | 14 |
| 3149 | Freymoyer, George..... | Smut-machines..... | 1 |
| 3294 | Fulk, David A., and L. B. Mc. Lain. | Fansing-mills..... | 1 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|--|--------|
| 3052 | Gallatin, Jeremiah | Ploughs | 1 |
| 3370 | Gardner, James P. | Sun-dials | 8 |
| 3065 | Gardner, John | Leather rollers | 16 |
| 3272 | Gardner, Smith | White lead, manufacture of | 4 |
| 3386 | Gates, William | Grain rakes | 1 |
| 3331 | Gaylord, Charles S. | Straw-cutters | 1 |
| 2967 | Gebhart, George | Bee-hives | 1 |
| | Geor. Gilbert. (See Elias John-son) | | |
| 3133 | Gibbs, William P. | Arranging staircases in buildings | 9 |
| 3392 | Gibson, William | Machine for making horse shoes | 2 |
| 3083 | Gill, John W. | Feeding silk-worms | 3 |
| 3282 | Gillett, Jason C. | Cutting shingles | 14 |
| 3047 | Gilroy, C. G. | Loom for weaving figured fabrics | 3 |
| 3094 | Gleason, John and H. C., and Nelson D. White, assignees of Horace Barbour. | Feeding or delivering rollers of carding engines, arrangement of. | 3 |
| 3357 | Gleason, Sewall | Machines for making hats of leather, India rubber, &c. | 16 |
| 2922 | Godden, John | Breaking and cleaning flax and hemp | 3 |
| 3073 | Gold, Stephen J. | Lamps | 5 |
| 2975 | Goodrich, Reuben A. | Tuyeres | 2 |
| 2959 | Goodwin, Eben | Preparing chewing tobacco | 4 |
| 2955 | Goss, Chester | Grain-cradles | 1 |
| | Gouliart, John. (See Charles Baer.) | | |
| 3000 | Graham, William | Sugar boilers | 4 |
| 3360 | Grant, Royal C. | Rotary steam-engine | 6 |
| 3250 | Graves, Jacob | Condensing or preparing cotton roving, &c., for spinning. | 3 |
| 3214 | Green, Joel | Cooking stoves | 5 |
| 3339 | Greenough, B. F. | Mode of using volatile oils for purposes of illumination. | 4 |
| 3084 | Greer, James | Cooking stoves | 5 |
| 2952 | Gregory, Clark B. | Grist mills | 13 |
| 3007 | Griffin, Rhesa, and Latham Y. Avery. | Salt boiler | 4 |
| 3197 | Grimes, William C. | Garlic-separators | 1 |
| | Griswold, G. S. F. (See L. E. Hicks.) | | |
| 3019 | Guerin, Napoleon E. | Hatching chickens by artificial heat | 22 |
| 3387 | Guild, Joseph | Bedstead fastenings | 17 |
| 3390 | Guilford, Simeon | Bloomery forge employed in the manufacture of wrought iron. | 2 |
| | Guion, Peter C. (See Jno. L. W. Nelstone) | | |
| 3121 | Hall, Lewis A. | Generating heat by hydrogen gas | 5 |
| 3332 | Hall, Sylvester W. | Propelling vessels by the buoyancy of air in water acting against inclined surfaces. | 7 |
| 3221 | Hall, William | Locks for safes, bank vaults, &c. | 2 |
| 3308 | Hall, William | Locks or latches, door | 2 |
| 3270 | Hallam, Alexander | Portable screw-presses | 12 |
| 3063 | Hamilton, James | Machinery for sawing curvilinear and compound bevel. | 14 |
| 3342 | Hamilton, James | Saw mill, for sawing timber with a direct or compound bevel. | 14 |
| | Hammond Artemus. (See William Adams.) | | |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|--|--------|
| | Hammond, Artemus, and William Adams, assignees of A. Hammond. (See Adams) | | |
| | Harris, Joseph. (See Wesley McCoy.) | | |
| 3164 | Hart, Albert D. | Cooking stoves | 5 |
| 3274 | Hart, Alexander H. | Coupling the forward axle of a four-wheel carriage with the reach and head block or rocker. | 10 |
| 2941 | Harvey, Thomas W. | Presses | 12 |
| 3144 | Havill, Philip and David Curran. | Tanners' flesh blacking | 4 |
| 3076 | Hayward, J. H. and N. P. | Stoves with revolving ovens | 5 |
| 3123 | Heald, Levi | Self-setting head and tail block for saw mill. | 14 |
| 3256 | Heard, John T. | Distilling alcohol | 4 |
| 3078 | Helm, Henry | Smut-machines | 1 |
| 3045 | Hews, Geo., Richard C. Marsh, and Nathaniel W. Tileston. | Piano-fortes | 18 |
| 2914 | Heygel, Joseph | Smut-machines | 1 |
| 3068 | Hibbard, Harmon | Dyeing | 4 |
| 3488 | Hicks, L. E., assignor to L. E. F. Griswold. | Lamp alcohol for medicated vapor bath.. | 5 |
| 3240 | Higbie, S. C. | Hydrants | 11 |
| 3010 | Higbie, S. C. | Pumps | 11 |
| 3071 | Higgins, Uriah | Drill for drilling or boring rock, &c. | 9 |
| 2977 | Hill, Arundel | Latch or fastener for window shutters and blinds. | 2 |
| 3245 | Hill, Morton B. | Fire ladders | 22 |
| | Hillis, William D. (See Oliver Clark.) | | |
| 3136 | Hizer, H., and A. B. Crawford.. | Threshing-machines | 1 |
| 3264 | Hobday, John | Ascertaining the centre of gravity and sailing trim of a vessel. | 7 |
| 3038 | Hodges, Alexander, agent of New England Screw Co., assignee of Cullen Whipple. | Removing the burrs from the undersides of the heads of wood screws. | 2 |
| 3029 | Hodges, Alexander, agent of New England Screw Co., assignee of Cullen Whipple. | Turning or shaving the heads of blanks for wood screws. | 2 |
| 3362 | Hollingsworth, John M. and Lyman. | Making paper | 3 |
| 3011 | Hopper, Samuel | Water-wheels | 11 |
| 3048 | Houghton, Luther | Rivets and nails for trunks and other purposes. | 2 |
| 3333 | Houghton, Thomas, and John F. Wallace. | Lard lamps | 5 |
| 3301 | Howard, Edward | Smut-machines | 1 |
| 2946 | Howard, Horace | Lard lamps | 5 |
| 2970 | Howe, John J. | Pins, machine for sticking, in rows in sheets of paper. | 22 |
| 3379 | Howell, Thomas D. | Bee-protectors | 1 |
| | Howell. (See Moorhead.) | | |
| 3363 | Hull, A. A. | Straw-cutters | 1 |
| | Hummer, David. (See Cyrus Morey.) | | |
| 3358 | Hunt, Salmon, administrator of Salmon Hunt. | Making wrought iron cannon | 19 |
| | Hunt, Walter. (See Robert B. Ruggles.) | | |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|---|--------|
| | Hunt, Walter. (See Jas. Thompson and Halsey Rogers.) | | |
| 3321 | Hutchinson, James..... | Washing-machine..... | 17 |
| 3177 | Iggett, John..... | Bending metal plate for roofing houses, machinery for. | 9 |
| 3263 | Jarvis, George O..... | Apparatus for reducing dislocations..... | 20 |
| | Jennings, Samuel K. (See Sam'l W. Stockton.) | | |
| 2980 | Johnson, Henry..... | Breaking and scutching, or cleaning, flax and hemp. | 3 |
| 3254 | Johnson, Nancy M..... | Artificial freezers..... | 4 |
| 3046 | Johnson, Nelson..... | Penstocks for water-wheels..... | 11 |
| 3306 | Johnson, Salmon..... | Mop irons..... | 17 |
| 3203 | Jones, Alexander..... | Sweeping or cleaning..... | 9 |
| 3101 | Jones, Luther..... | Lard lamps..... | 5 |
| 3091 | Kelly, H. H..... | Gin, saw, for ginning cotton..... | 3 |
| | Kellogg, George C. (See John C. Smith.) | | |
| 3378 | Kelsey, Horatio H. C..... | Valves for hydrants..... | 11 |
| 3178 | Kendall, Hartwell..... | Construction of cheese press..... | 12 |
| 2997 | Kenderdine, John E..... | Saw mills..... | 14 |
| 3296 | Kenner, Henry B..... | Cocoa grass, destroying..... | 1 |
| | Killam Hervey. (See Alvin Savage.) | | |
| | Kinney, M. G. (See William Engle.) | | |
| 2963 | Kinsley, Rodolphus, assignee of Samuel Noyes. | Compound lever gravitating locks or latch for doors, &c. | 2 |
| 3233 | Kirk, Charles..... | Clocks..... | 8 |
| 2972 | Kirk, Josiah W..... | Fenders to protect boats against injury from snags and sawyers. | 7 |
| | Knight, William. (See William Norris.) | | |
| 3196 | Klein, Joseph..... | Smut-machine..... | 1 |
| 3798 | Ladrange, Pierre E..... | Loom, knitting..... | 3 |
| 3023 | Laing, John..... | Pipes of lead and other soft metals, &c., machine for making. | 2 |
| 3086 | Lamb, Seth..... | Cotton-presses..... | 12 |
| 3231 | Landis, John K..... | Straw-cutters..... | 1 |
| 3022 | Latta, Alexander B..... | Stirrups for the paddle-wheels of steam and other boats, machine for bending the. | 2 |
| 3346 | Latting, Waring..... | Umbrellas..... | 21 |
| 2999 | Lee, Frederick L..... | Smut-machines..... | 1 |
| 2960 | Leonard, William B..... | Presses..... | 12 |
| | Lloyd, C. C. (See D. Stuart.) | | |
| 2993 | Lindley, N. H., & Wm Perry.. | Churns..... | 1 |
| 3020 | Little, David..... | Disengaging horses from carriages..... | 10 |
| 3343 | Littlefield, Theodore L..... | Locks or latches, door..... | 2 |
| 3190 | Livingston, Robert M..... | Cotton, cleaning unginned..... | 3 |
| 3033 | Lull, Orrin..... | Smut-machines..... | 1 |
| 3215 | Luther, John..... | Coffee-mills..... | 13 |
| 3198 | Mallory, Samuel..... | Rut shears, for repairing and improving roads. | 9 |
| 3369 | Maltby, James..... | Rakes, horse..... | 1 |
| 3374 | Mann, Zadok H..... | Tuyeres..... | 2 |
| 3208 | Manning, William..... | Corn shellers..... | 1 |
| 2212 | Markham, John S., assignee of E. G. Matthews. | Vices..... | 2 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|--|--------|
| | Marsh & Tileston. (See Hews.) | | |
| | Marsh. (See White.) | | |
| 3287 | Marsh, Thomas J..... | Timber, fire-wood, &c., machine for cross-cutting. | 14 |
| 3014 | Martin, Edwin..... | Awl hafts..... | 2 |
| 2947 | Mason, John..... | Carding engines, machinery for making laps for feeding, &c. | 3 |
| 3284 | Matteon, Morris..... | Baths, medicated vapor..... | 20 |
| 3069 | May, Harvey H..... | Ploughs..... | 1 |
| 3098 | McConnell, William P..... | Boilers, steam, safety valves for..... | 6 |
| 2929 | McCoy, W., assignee of J. Harris. | Bee-hives..... | 1 |
| 3309 | McCrae, Gavin..... | Loom, weavers', for working any number of heddles. | 3 |
| 3220 | McCubben, Hugh..... | Twine and small cord, machinery for making various kinds of. | 3 |
| 3373 | McKnight, James L..... | Crushers, corn and cob..... | 1 |
| | McLain. (See Fulk.) | | |
| | McMahon. (See Perkins.) | | |
| 3314 | McNair, Alexander H..... | Supporters, uterine..... | 20 |
| 3328 | McWhorter, James..... | Hoops, coopers', making out of split timber | 14 |
| 2966 | Merrick, Solyman, assignee of J. C. Terry. | Rack wrench..... | 2 |
| 2930 | Merry, Cornelius..... | Straw-cutters..... | 1 |
| 3060 | Mickles, Lovel G..... | Steamboats, preventing, from sinking.... | 7 |
| 3344 | Miller, Francis J..... | Stop-cocks..... | 11 |
| 2923 | Miller, James M..... | Grinding corn with the cob, mill for.... | 13 |
| 3325 | Miller, Joseph..... | Bee-hives..... | 1 |
| 3377 | Miller & Bancroft..... | Axles of railroad cars..... | 10 |
| 3246 | Miller, William D..... | Bee-hives..... | 1 |
| 3278 | Millholland, James..... | Spring for railroad cars..... | 10 |
| 3329 | Mitchell, Arthur..... | Washing-machines..... | 17 |
| 3182 | Mitchell, James K..... | Clover-hullers..... | 1 |
| 3169 | Mollineaux, James..... | Wagon boxes, moulds for casting..... | 10 |
| 3167 | Montgomery, Lee..... | Brick-machines..... | 15 |
| 3351 | Moody & Dakin..... | Dock, floating dry, method of working a, in connexion with a platform and basin, by means of which vessels can be raised and deposited on bed or railways, &c. | 9 |
| 3352 | Moore, James B..... | Ploughs..... | 1 |
| 3193 | Moore, John..... | Ploughs..... | 1 |
| 2950 | Moore, Wm. S..... | Lamps, lard..... | 5 |
| 2953 | Moorehead & Howell..... | Bee-hives..... | 1 |
| 3161 | Morey & Hammer..... | Tailors' measures..... | 21 |
| 3187 | Morgan, Amos..... | Drilling iron, &c., machine for..... | 2 |
| 3070 | Morgan, Griffith..... | Bolts, copper, uniting..... | 2 |
| 3111 | Morrill, Benjamin..... | Balances..... | 12 |
| 3323 | Morrill, Henry A..... | Steam-engines, valves for reversing the action of. | 6 |
| 3276 | Morris, James..... | Wheels, carriage, immersing in water, after putting on the hoop or tire. | 10 |
| 3162 | Morris, John..... | Bedsteads..... | 17 |
| 3316 | Morse, Samuel F. B..... | Pipes, metallic, introducing wire into.... | 9 |
| 3432 | Mott, Jordan L..... | Stoves, cooking..... | 5 |
| 3247 | Mottmiller, Gottlieb..... | Seed-planters..... | 1 |
| 2949 | Munger, Stiles..... | Water-wheels..... | 11 |
| | Murphy. (See Farrior.) | | |
| 3298 | Mussey, Thomas..... | Streets, sweeping..... | 9 |
| 3110 | Nash, John..... | Ploughs..... | 1 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|---|---|--------|
| 4714 | Newall, Robert S | Metallic ropes..... | 2 |
| 3135 | Newell, Robert | Locks, construction of..... | 2 |
| 3179 | Newton, Daniel | Clapboards, sawing-machine for..... | 14 |
| 3115 | Newton, Philo S | Fire-arms, attached muzzle for..... | 19 |
| 3218 | Nock, Joseph | Leaf-holders..... | 18 |
| 3188 | Noe, Charles L..... | Hats and bonnets of horse hair | 3 |
| 3210 | Norcross, Jonathan | Saw-guides, mill..... | 14 |
| 2951 | Norris, Wm., assignee of S. Norris and W. Knight. | Carriages of locomotive steam-engines... | 10 |
| 3230 | Noyes, Isaac | Salt making | 4 |
| | Noyes. (See Kingsley.) | | |
| 3034 | Ogle, William | Ploughs | 1 |
| 3024 | Oliver, Thomas | Tailors' measures | 21 |
| | Ormsby. (See Ives) | | |
| 2932 | Osgood, Alfred | Carriages, four-wheeled, coupling | 10 |
| 3041 | Owen, Joseph P | Brick, machine for moulding..... | 15 |
| 2936 | Palmer, Augustus C..... | Hinges or butts for hanging and fastening window blinds and shutters. | 2 |
| 2909 | Palmer, Granville | Cars for removing gravel and earth on railroads. | 10 |
| 3112 | Parker, Eliphalet H..... | Scales, counter..... | 12 |
| 3172 | Parsons, Daniel H | Water-wheels | 11 |
| 2937 | Pearson, Michael | Life-preserver, for the use of steam-boats, &c. | 7 |
| 3384 | Peck, Jeremiah | Vise, bench | 2 |
| 3061 | Peck, Orrin, & Noble | Metal, sheet, machinery for working | 2 |
| 3130 | Pendell, David L | Garments, measuring and cutting | 21 |
| 3141 | Pepple, Edmund..... | Bee-hives | 1 |
| 3037 | Perkins & McMahon | Wheels, cast iron, constructing, for locomotive steam-engines, cars, trucks, &c. | 10 |
| | Perkins. (See Chickering.) | | |
| | Perry (See Lindley.) | | |
| 68 | Phillips, Alonzo D..... | Matches, friction..... | 4 |
| | Pilbrow. (See Collins.) | | |
| 3283 | Platt, Josiah | Grist-mill | 13 |
| 2984 | Plumbe, John, jr..... | Galvanic battery | 8 |
| 3281 | Pomeroy, Elisha M..... | Buttons, paper..... | 21 |
| 2990 | Pond, Moses..... | Ranges, cooking | 5 |
| 3239 | Pond, Moses..... | Stoves | 5 |
| 3194 | Post, Nathan | Collars, horse, constructing | 16 |
| 3128 | Postley, Charles | Stoves, cooking | 5 |
| 3184 | Pratt, Elijah | Sawing and planing by combining the plane with a saw. | 14 |
| 3262 | Pratt, Elijah | Saws, circular, manner of stiffening..... | 2 |
| 3025 | Pressey & Dudley | Corn-shellers | 1 |
| 2962 | Price, Francis | Grinding grain, &c., mills for | 13 |
| 3317 | Provost, W. F. & C. J | Presses, cotton | 12 |
| 3222 | Quatermass, R. A..... | Shingles, veneers, &c., machine for cutting. | 14 |
| 3137 | Quigley, Thomas B..... | Ploughs | 1 |
| 2992 | Rand, Luke S | Horse-power for driving machinery..... | 13 |
| 2938 | Raymond, Lewis | Life-boat | 7 |
| 3334 | Reeder, Charles..... | Steam-engines, air-pump used in low-pressure or condensing. | 6 |
| 2919 | Reeder, Jesse | Grain-cutters | 1 |
| 3150 | Reif, Christian | Threshing-machine | 1 |
| 3142 | Reinhardt, Charles C..... | Spurs | 2 |
| 3051 | Remington, John R..... | Cotton-presses | 12 |
| 3095 | Remington, John R..... | Bridges and other structures, increasing the effective strength of beams or rafters of wood or other materials used in. | 9 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--|--|--------|
| 2998 | Rich, Joseph C | Bee-hives | 1 |
| 3299 | Rich, Joseph C | Washing-machine | 17 |
| 3160 | Richards, Edward | Extension tables | 17 |
| 3322 | Richards, Salmon | Horse-power, endless chain | 13 |
| 3035 | Richards, Samuel | Glass, flattening and annealing | 15 |
| 3036 | Richardson, Israel J. | Straw-cutters | 1 |
| 3229 | Richardson, Israel J. | Horse-power, portable | 13 |
| 3039 | Rider, A. K. & W. S. | Steam engines, rotary | 6 |
| | Ripley, E. (See Johnson & al.) | | |
| 3211 | Robb, James | Stoves | 5 |
| 3200 | Robbins, Zenas C | Boilers, steam, constructing | 6 |
| 2904 | Robinson, Enoch | Knobs, door, method of attaching, to their spindles. | 2 |
| 3183 | Robinson, Pliny | Streets, sweeping | 9 |
| 2958 | Roebbling, John A. | Spark-arresters | 6 |
| | Rogers (See Thompson.) | | |
| 3313 | Roney, Benjamin T. | Stoves, cooking | 5 |
| | Root. (See Collins Manufacturing Company.) | | |
| 3341 | Root, F. P. | Grain-cleaners | 1 |
| 3206 | Rose, Henry | Lard-lamps | 5 |
| 3079 | Rose, Jacob S. | Breathing-tubes | 20 |
| 3251 | Rosa, James P. | Straw-cutters | 1 |
| 3227 | Ruggles, Robert B., assignee of W. Hunt. | Boots and shoes, soles of | 16 |
| 3260 | Rust, Samuel | Lamps | 5 |
| 2906 | Sage, Charles T. | Hernia, cure of, by means of injections | 20 |
| 2903 | Sampson, Elnathan | Shingles, sawing | 14 |
| 2902 | Sanderson, Robert | Safes, &c., improvement in, to protect them from insects. | 17 |
| 3304 | Sanford, James | Straw-cutters | 1 |
| 3216 | Sause, Edmund J. | Plates, door | 2 |
| 3350 | Savage, Alvin, and H. Killam .. | Bellows, rotary | 11 |
| | Schofield, Nathan | Water-wheels, steam-engines, &c., regu- lating the motions of. | 11 |
| 2924 | Schofield, Nathan, Charles, and Edwin A. | Corn-shellers | 1 |
| 3003 | Schuyler, Robert | Propelling vessels by means of continuous streams of water. | 7 |
| | Searle. (See Thurston.) | | |
| 3154 | Seguine, Bornt | Cotton, cleaning, before ginning | 3 |
| 2918 | Serrell, James E. | Pipes, metallic, machinery and process of manufacturing. | 2 |
| 3273 | Sexton, Samuel B. | Stoves, cooking | 5 |
| 3102 | Shaw, Luke | Dough, breaking, machine for | 17 |
| 3242 | Shepard, Benjamin | Stoves, cooking and air-heating | 5 |
| 3109 | Shepard, Martin H. | Bags for separating Elaine and stearine by pressure. | 3 |
| 3265 | Shryock & Underwood | Furnaces for steam boilers | 6 |
| 3096 | Shugert, John | Washing-machines | 17 |
| 3189 | Sickels, Frederick E. | Steam-engines, valves of, opening and closing the. | 6 |
| 3171 | Sides, Henry C. | Brakes for railroad cars, &c. | 10 |
| 3085 | Simons, M. P., assignee of W. Thompson. | Daguerreotype pictures, coloring | 18 |
| 3160 | Sipperly, David N. | Garments, cutting | 21 |
| 3090 | Sizer, Samuel D. | Guns, stocking, and other purposes, method of attaching bits eccentrically to their arbors, to be used in machinery for. | 19 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|---|---|--------|
| | Skinner. (See Tilt.) | | |
| 3349 | Smith, B. C | Paper, making cane hemp for making ... | 3 |
| | Smith. (See White & Marsh.) | | |
| 3173 | Smith, Hervey | Salt, &c, manufacture of | 4 |
| 2969 | Smith & Kellogg | Cotton bats or laps, making | 3 |
| 2907 | Smith, John P. | Rules, sliding | 8 |
| 2948 | Smith, Riley | Timber, &c., boring, machine for | 14 |
| 3170 | Smylie, Edward | Andirons, construction of | 2 |
| 3336 | Somerby, Rufus | Blow-pipes, table | 11 |
| 3290 | Sowle & Carsley | Whale blubber, machines for mincing | 22 |
| 3021 | Spalding, Samuel B | Stoves with elevated ovens | 5 |
| 3353 | Spencer, Robert | Saddle, spring | 16 |
| 2961 | Springsteed, R. H. | Drilling-machine | 2 |
| 3258 | Starr, James | Winnowing-machines | 1 |
| 3271 | Stearns, Daniel | Water-wheels | 11 |
| 3366 | Stephens, Henry K. | Steam-engines, condenser of | 6 |
| 3226 | Stetson, Edward | Bells, house, hanging | 17 |
| 3013 | Stewart, James | Type casting | 18 |
| 3097 | Stewart, William B | Gin, saw, for ginning cotton | 3 |
| 2943 | Stewart, William N. | Flax and hemp, breaking and cleaning ... | 3 |
| 3223 | Stillman, Alfred | Juices, saccharine, evaporating | 4 |
| 2916 | Stimpson, Herbert H. | Stoves | 5 |
| 2921 | Stockton, Samuel W., assignee of S. K. Jennings. | Pessary for prolapsus uteri | 20 |
| 3393 | Street, James H. | Propelling boats | 7 |
| 3345 | Street, John | Slates, artificial writing | 4 |
| 3326 | Stroop & Esteale | Box trap for catching animals | 22 |
| 2917 | Stuart & Lloyd | Hinges, casting | 2 |
| 2927 | Summers, Ralph | Smut-machines | 1 |
| 2964 | Summer, Palmer | Chimney cowls | 5 |
| 10 | Swift, Beriah | Dye woods, cutting and shaving | 14 |
| 2915 | Taylor, Henry E. | Cradle-rockers | 17 |
| 3064 | Taylor, James | Stoves | 5 |
| 2998 | Teague, Abner | Ploughs | 1 |
| | Terry. (See Merrick.) | | |
| 2976 | Terry, Silas B. | Lamps, lard | 5 |
| 2987 | Thatcher, John M. | Straw-cutters | 1 |
| 3368 | Thomas, Hopkins | Coal, breaking and screening | 5 |
| 3330 | Thomas, John E. | Stoves, cooking | 5 |
| 3054 | Thompson, Archibald | Mortising hubs, machinery for | 14 |
| | Thompson. (See Simons.) | | |
| 3305 | Thompson & Rogers, assignee of W. Hunt. | Nails, tacks, &c., feeding nail and tack plates, &c., into machines for cutting. | 2 |
| 3044 | Thompson, William | Lamps, lard | 5 |
| 3223 | Thurber, Charles | Printing, machines for | 18 |
| 3067 | Thursby, John | Yarn, tarring | 3 |
| 3163 | Tibbals, Thaddeus, Henry, and Daniel. | Oakum, machinery for the manufacture of | 3 |
| | Tileston. (See Hews & Marsh.) | | |
| 2910 | Tilghman, Richard A. | Chromic yellow, making | 4 |
| 3155 | Tilt & Skinner | Threads or cords, dressing or finishing worsted or other. | 3 |
| 3381 | Todd, Henry | Seed-planters | 1 |
| 3243 | Tomlinson, Harvey | Lamps, lard | 5 |
| 3126 | Tough, John S. | Springs to carriages, manner of applying | 10 |
| 3674 | Troughton, Nicholas | Ores requiring washing, apparatus for separating or dressing. | 2 |
| 3143 | Turnbull, James | Boots, making | 16 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|---|--|--------|
| 3125 | Tuttle, W. & J. M., assignees of C. F. Voorhies. Underwood, S. (See Shryock.) | Locks, door and other..... | 2 |
| 3318 | Vale, Gilbert..... | Globes..... | 8 |
| 3388 | Vanamberg, Isaac..... | Fences..... | 9 |
| 2957 | Van Antwerp, Peter..... | Churn-dashers..... | 1 |
| 3300 | Van Tuyl, David B. | Temperature, instruments for regulating. | 5 |
| 3147 | Varney, George D..... | Surveying instruments..... | 8 |
| | Voorhies. (See Tuttle.) | | |
| | Walker. (See Wilson.) | | |
| 3311 | Walker, W. & M. C..... | Ploughs..... | 1 |
| | Wallace. (See Houghton.) | | |
| 3180 | Wallace, Thomas..... | Metal, preparing, for being manufactured into wire. | 2 |
| 3359 | Warner, Chauncey E..... | Veneers and other pieces of wood, cutting and straightening. | 14 |
| 3116 | Watchman, John..... | Iron, &c., sheet and plate, bending..... | 2 |
| 3106 | Waterman, Henry..... | Vessels, connecting the tiller with the rudder-head of. | 7 |
| 3213 | Waterman, Nathaniel..... | Bath, portable shower..... | 20 |
| 3248 | Watts, Benjamin F..... | Tides and currents, representation of.... | 7 |
| 3018 | Webb, Joseph W..... | Quilting-frames, couplings for..... | 17 |
| 3043 | Webb, Joseph W..... | Vegetable-cutters..... | 17 |
| 29-9 | Wells, Philip..... | Water-wheels..... | 11 |
| 3093 | Whetstone & Guion..... | Fasteners, shutter..... | 2 |
| | Whipple. (See Hodges.) | | |
| 3289 | White, Marsh & Smith..... | Supporters, abdominal..... | 20 |
| 3094 | White, N. D., and J. & H. C. Gleason, assignees of H. Barbour. (See Gleason.) | | |
| 3006 | Whitney, Otis..... | Presses, cotton..... | 12 |
| 3356 | Wiard, Thos..... | Ploughs, gangs of..... | 1 |
| 2901 | Wilbar, Zibeon..... | Spark-arresters..... | 6 |
| 3075 | Wilcox, Amander N..... | Spinning cotton, wool, &c., machine for .. | 3 |
| 3032 | Wilhelm, Chas..... | Lamps, lard..... | 5 |
| 2991 | Williams, John, jr..... | Screw-wrench..... | 2 |
| 2945 | Williamson, Stephen D..... | Boxes and other bodies, removing square and other prismatic. | 22 |
| 3012 | Wills, Harry A..... | Spikes, wrought-iron..... | 2 |
| 3319 | Wilson, Chas..... | Stop-cocks, connecting, for hydraulic presses. | 11 |
| | Wilson. (See Yale.) | | |
| 3231 | Wilson, Ezekiel, assignee of J. C. Walker. | Boxes, &c, marking..... | 22 |
| 3224 | Wilson, James..... | Caboos, ship's..... | 5 |
| 3103 | Wilson, Jno. V..... | Trusses..... | 20 |
| 2931 | Wilson, William..... | Locks and keys..... | 2 |
| 3201 | Winans, Ross..... | Steam-engines, locomotive..... | 6 |
| 3156 | Winslow, Jno. F., assignee of W. Whitaker. | Hinges, butt, machine for forming the eyes of. | 2 |
| 3217 | Winslow & Osgood..... | Horse shoes, chain links, &c., machines for forming. | 2 |
| 3159 | Wood, Horace..... | Wagons and other carriages..... | 10 |
| 3157 | Woodin, John G..... | Roofing, metal, constructing, for houses.. | 9 |
| 2928 | Woodman, E. G..... | Forts, iron, construction of..... | 19 |
| 3361 | Woodward, Moses S..... | Brakes, for retarding carriages in descending hills, &c. | 10 |
| 3074 | Woodworth, Arad..... | Brick-presses..... | 15 |

Persons whose patents for inventions have expired.

| No. | Patentee. | Invention or discovery. | Class. |
|------|--------------------------|---|--------|
| 3317 | Wyeth, Nathaniel J. | Ice-cutters and markers | 22 |
| 3323 | Wyeth, Nathaniel J. | Ice, cars and receiving platform for receiving blocks of. | 22 |
| 3327 | Wyeth, Nathaniel J. | Ice, machinery for elevating blocks of, &c. | 22 |
| 3312 | Yale & Wilson | Locks for doors, &c., combination safety. | 2 |
| 3063 | Yates, Peter | Pulleys, uncoupling and coupling, with their shafts. | 13 |

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR DESIGNS HAVE EXPIRED DURING THE YEAR 1857.

| No. | Patentees. | Designs. |
|-----|--|---------------------------|
| 273 | Archer, E. S., and R. F. Warner | Chandeliers. |
| 299 | Archer, E. S., and R. F. Warner | Lamps. |
| 268 | Bacon, Lathrop S. | Stoves. |
| 286 | Bailey, Joel, and Russell Wheeler | Stoves. |
| 330 | Ballard, William | Railings, iron. |
| 278 | Bartlett, David L. | Stoves. |
| 307 | Blanchard, Reuben J., assignor to Billings P. Learned & Geo. H. Thatcher. | Stoves. |
| 321 | Blanchard, Reuben J., assignor to B. P. Learned & Geo. H. Thatcher. | Stove. |
| 333 | Blanchard, Reuben J., assignor to B. P. Learned & Geo. H. Thatcher. | Stoves. |
| 285 | Brownell, Asa C. | Stoves. |
| 287 | Bryant, Walter | Umbrella stands. |
| 305 | Bryant, Walter | Bracket, cast-iron. |
| 314 | Bryant, Walter | Blower stand. |
| 266 | Conklin, James H., assignor to S. B. Sexton & Co. | Stoves. |
| 272 | Conklin, James H. | Stoves. |
| 302 | Conklin, James H., and A. W. Jones, assignors to James McGregor, jr. | Stoves. |
| 279 | Crandall, Joshua, assignor to A. Cox & Co. | Stoves. |
| 297 | Crandall, Joshua, assignor to E. Johnson & D. B. Cox... | Stoves. |
| 270 | Cresson, W. P., David Stuart, and P. Seibert, assignors to W. P. Cresson. | Stoves. |
| 271 | Cresson, W. P., David Stuart, and P. Seibert, assignors to W. P. Cresson. | Stoves. |
| 261 | Cresson, Wm. P., David Stuart, and Peter Seibert, assignors to Wm. P. Cresson. | Stoves. |
| 262 | Cresson, Wm. P., David Stuart, and Peter Seibert, assignors to Wm. P. Cresson. | Stoves. |
| 288 | Davy, John T. | Stoves, coal. |
| 298 | Doane, Calvin | Stoves. |
| 309 | Donavan, Robert | Stoves. |
| 329 | Eddy, Laben | Stoves. |
| 345 | Gibbs, S. W., assignor to North, Harrison, & Co. | Stoves. |
| 337 | Gleason, William B., assignor to Jas. Hartshorn and Winslow Ames. | Stoves. |
| 336 | Gordon, Chas. P. & Geo. B. | Spoon-handles. |
| 267 | Green, Jeremiah D., and George Warren | Stoves. |
| 280 | Green, Jeremiah D., and George Warren | Stoves, cooking. |
| 331 | Haynes, C. Y. | Bas-relief of Henry Clay. |
| 274 | House, Samuel A. | Stoves. |
| 282 | Hutchinson, James, assignor to D. A. E. & N. B. Powers. | Floor-cloth, printed. |

Persons whose patents for designs have expired.

| No. | Patentees. | Designs. |
|-----|--|--------------------------------------|
| 326 | Jackson, James L..... | Grate-frame and fender. |
| 300 | Jewett, S. S., and F. H. Root..... | Stoves. |
| 308 | Jewett, Sherman S., and F. H. Root..... | Stoves. |
| 325 | Jones, Anthony W., assignor to Edward R. Brown..... | Stove. |
| 313 | King, John C..... | Bust of Daniel Webster. |
| 260 | Lamb, Joseph G., and Conrad Harris, assignors to Wm. C. Davis..... | Stoves. |
| 322 | Lamb, Joseph G..... | Stove. |
| 323 | Lamb, Joseph G..... | Stove. |
| 340 | Lombard, Charles A..... | Stoves. |
| 244 | Owens, J. E., J. Ebert, and E. G. Dyer..... | Stoves. |
| 303 | Owens, J. E., J. Ebert, and E. G. Dyer..... | Stoves. |
| 281 | Palmer, P. A..... | Stoves. |
| 289 | Paul, Amos..... | Stoves. |
| 304 | Paul, Amos..... | Grate, portable. |
| 290 | Penniman, Elijah F..... | Stoves. |
| 275 | Peterson, Richard, David Stuart, and Peter Seibert, assignors to Richard Peterson..... | Stoves. |
| 338 | Pierce, Samuel, assignor to Johnson, Cox, & Fuller..... | Stoves. |
| 283 | Race, Washburn..... | Stoves. |
| 296 | Race, Washburn..... | Stoves. |
| 291 | Rathbone, John F..... | Stoves. |
| 292 | Rathbone, John F..... | Stoves. |
| 306 | Rathbone, John F..... | Stoves, coal. |
| 301 | Richmond, Apollos, assignor to A. C. Barstow & Co. | Stoves. |
| 333 | Richmond, Apollos, assignor to A. C. Barstow & Co. | Stoves. |
| 310 | Rig, George W., assignor to Johnson, Cox, & Fuller | Stove, parlor. |
| 327 | Ripley, Ezra, assignor to George W. Eddy..... | Stoves. |
| 328 | Ripley, Ezra, assignor to George W. Eddy..... | Stoves. |
| 284 | Root, D..... | Stoves. |
| 334 | Root, D..... | Stoves. |
| 335 | Royce, John S..... | Carriage plates. |
| 269 | Sanderson, Wm. L., assignor to Clute & Brothers..... | Stoves. |
| 296 | Sanderson, Wm. L..... | Stoves, cooking. |
| 311 | Sanderson, Wm. L., assignor to S. Cole and G. C. Mosher..... | Stove. |
| 324 | Savery, William..... | Stove. |
| 258 | Shepard, Henry L..... | Stoves. |
| 259 | Simmons, Peter J..... | Stoves. |
| 339 | Smith, Morris, and Benona S. Gleason..... | Stoves. |
| 315 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator, plates for. |
| 316 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator, plates for. |
| 317 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator, plates for. |
| 318 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator, plates for. |
| 319 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator, plates for. |
| 320 | Tuttle, Charles T., and Jas. S. Baily..... | Register and ventilator plates for. |
| 263 | Vose, Samuel D..... | Stoves. |
| 264 | Vose, Samuel D..... | Stoves. |
| 265 | Vose, Samuel D..... | Stoves. |
| 277 | Wager, James..... | Stoves. |
| 293 | Wager, James, David Pratt, and Volney Richmond..... | Stoves. |
| 276 | Warwick, Charles W., F. Leibrandt, J. G. Abbott, and A. Lawrence..... | Furnace, portable. |
| 312 | Warnick, Charles W..... | Stoves. |

CLASSIFIED LIST OF PATENTS FOR INVENTIONS AND DISCOVERIES THAT HAVE EXPIRED DURING THE YEAR 1857.

CLASS I.—AGRICULTURE, including instruments and operations.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|----------------------------------|--|-----------------------------|-----------------|
| Bee-hives | Edmund Pepple | Canton, Ohio | June 24, 1843. |
| Bee-hives | George Doffer | Frederick, Md. | Mar. 4, 1843. |
| Bee-hives | George Gebhart | Lebanon, Pa. | Feb. 20, 1843. |
| Bee-hives | Joseph C. Rich | Penfield, N. Y. | Mar. 4, 1843. |
| Bee-hives | Joseph Miller | Lexington, Ohio | Nov. 6, 1843. |
| Bee-hives | Westley McCoy, assignee of | St. Clairsville, Ohio | Jan. 27, 1843. |
| Bee-hives | Joseph Harris | Belmont county, Ohio | Sept 1, 1843. |
| Bee-hives | Wm. D. Miller | Mad River, Ohio | Feb. 16, 1843. |
| Bee-hives | Wm. L. Moorhead and Thos. D. Howell | Zanesville, Ohio | Dec. 15, 1843. |
| Bee protectors | Thomas D. Howell | Zanesville, Ohio | July 8, 1843. |
| Cane-cutters | John P. Bryan | Princeton, Ky. | Mar. 10, 1843. |
| Churns | N. H. Lindley and | Bedding, Conn. | Feb. 16, 1843. |
| Churn dashers | William Perry | Bridgeport, Conn. | July 20, 1843. |
| Clover-bullers | Peter Van Antwerp | Coeymans, N. Y. | Oct. 6, 1843. |
| Cocoa grass, destroying | James K. Mitchell | Danville, Pa. | Mar. 30, 1843. |
| Corn-shellers | Henry B. Kenner | New Orleans, La. | Jan. 20, 1843. |
| Corn-shellers | Charles G. Preasey and James B. Dudley | Andover, N. H. | Aug. 4, 1843. |
| Corn-shellers | Nathan, Charles, and Edwin A. Scofield | Norwich, Conn. | Oct. 6, 1843. |
| Corn-shellers | William Manning | South Trenton, N. J. | Dec. 5, 1843. |
| Fanning mills | David A. Fulk and | Hocktown, Pa. | July 26, 1843. |
| Garlic-machines | Lazarus B. McLain | New Lisbon, Ohio | Nov. 15, 1843. |
| Garlic-separators | Samuel Fahrney | Boonsboro', Md. | Feb. 16, 1843. |
| Grain-cleaners | William C. Grimes | York, Pa. | Jan. 20, 1843. |
| Grain-cradles | F. P. Root | Sweden, N. Y. | Feb. 9, 1843. |
| Grain-cutters | Chester Goss | Madrid, N. Y. | June 24, 1843. |
| Grain-separators | Jaes Reeder | Alton, Ill. | Sept. 9, 1843. |
| Hoes to handles, attaching | Dennis Claude, Jr | Annapolis, Md. | June 24, 1843. |
| Manure making | Oliver Clark and William D. Hillis | Hudson, Ohio | Mar. 10, 1843. |
| Ploughs | Charles Beer and John Gouliart | Baltimore, Md. | |
| | Abner Teague | Jackson, Tenn. | |

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|-------------------------------|---|-------------------------------|---|
| Ploughs..... | Harvey H. May..... | Galesburgh, Ill..... | May 2, 1843. |
| Ploughs..... | James B. Moore..... | Wilmington, Del..... | Nov. 24, 1843. |
| Ploughs..... | Jeremiah Gallatin..... | Manchester, Ohio..... | April 15, 1843. |
| Ploughs..... | J. S. Eastman, assignee of George Cley..... | Baltimore, Md..... | Sept. 14, 1843. |
| Ploughs..... | John Moore..... | Lexington, Ky..... | July 22, 1843. |
| Ploughs..... | John Nash..... | Middlebury, Ohio..... | May 26, 1843. |
| Ploughs..... | Thomas B. Quigley..... | Mansfield, Ohio..... | June 14, 1843. |
| Ploughs..... | William Black..... | Scott county, Ill..... | Sept. 14, 1843. |
| Ploughs..... | William Ogle..... | Frederick, Md..... | April 6, 1843. |
| Ploughs..... | W. and M. C. Walker..... | Washingtonville, Pa..... | Oct. 20, 1843. |
| Ploughs, double..... | Peter Elchar..... | Wooster, Ohio..... | Dec. 5, 1843. |
| Ploughs, gangs of..... | Thomas Ward..... | East Avon, N. Y..... | Nov. 24, 1843. |
| Ploughs, wheel..... | Thomas D. Burrall..... | Geneva, N. Y..... | Oct. 26, 1843; antedated Aug. 26, 1843. |
| Rakes, grain..... | William Gates..... | Barre Centre, N. Y..... | Dec. 20, 1843. |
| Rakes, horse..... | James Maltby..... | North Branford, Conn..... | Dec. 5, 1843. |
| Seed-planters..... | Gottlieb Mottmiller..... | Columbus, Ohio..... | Sept. 1, 1843. |
| Seed-planters..... | Henry Todd..... | Orford, N. H..... | Dec. 15, 1843. |
| Smut-machine..... | Joseph Klein..... | Lowhill, Pa..... | July 26, 1843. |
| Smut-machines..... | Edward Howard..... | Fredonia, N. Y..... | Oct. 12, 1843. |
| Smut-machines..... | Frederick L. Lee..... | Washington, N. Y..... | Mar. 10, 1843. |
| Smut-machines..... | George Freymoyer..... | Clichester, Pa..... | June 24, 1843. |
| Smut-machines..... | Henry A. Buck..... | Fredonia, N. Y..... | May 26, 1843. |
| Smut-machines..... | John Coleman..... | Blacklegs, Pa..... | Nov. 15, 1843. |
| Smut-machines..... | Joseph Heygel..... | Salisbury, Pa..... | Jan. 16, 1843. |
| Smut-machines..... | Orrin Lull..... | McConnellsville, Ohio..... | April 6, 1843. |
| Smut-machines..... | Ralph Summers..... | Seneca Falls, N. Y..... | Jan. 27, 1843. |
| Smut-machines..... | Thomas Bookman..... | Lexington district, S. C..... | June 3, 1843. |
| Smut-machines..... | Thomas Brown..... | Rome, N. Y..... | Aug. 4, 1843. |
| Smut-machines..... | William Dumont..... | Seneca Falls, N. Y..... | Feb. 24, 1843. |
| Smut-machines..... | William Engle and M. G. Kinney..... | Conyngham, Pa..... | May 19, 1843. |
| Smut and garlic-machines..... | William Delaney..... | Cornwall, N. Y..... | Oct. 6, 1843. |
| Straw-cutters..... | A. A. Hull..... | Croton, N. Y..... | Dec. 4, 1843. |
| Straw-cutters..... | Charles S. Gaylord..... | Gaylord's Bridge, Conn..... | Nov. 6, 1843. |
| Straw-cutters..... | Charles T. Botts..... | Richmond, Va..... | Mar. 4, 1843. |
| Straw-cutters..... | Cornelius Merry..... | Ichaca, N. Y..... | Jan. 27, 1843. |
| Straw-cutters..... | Israel J. Richardson..... | New York..... | April 10, 1843. |
| Straw-cutters..... | James P. Ross..... | Lewinsburg, Pa..... | Sept. 1, 1843; antedated June 1, 1843. |

I.—Expired patents for inventions.

| Inventions or discoveries. | Patentees | Residence. | Date of patent. |
|----------------------------|-----------------------------------|-------------------------|-----------------|
| Straw-cutters..... | James Sanford..... | Bedding, Conn..... | Oct. 12, 1843. |
| Straw-cutters..... | John C. Concklin..... | Peekskill, N. Y..... | May 2, 1843. |
| Straw-cutters..... | John K. Landis..... | East Hempfield, Pa..... | Aug. 26, 1843. |
| Straw-cutters..... | John M. Thatcher..... | Milton, Pa..... | Mar. 4, 1843. |
| Scythe need..... | George Farquhar..... | Easton Pa..... | July 12, 1843. |
| Threshing-machines..... | Christian Reif..... | Hartleton, Pa..... | June 24, 1843. |
| Threshing-machines..... | George Austine..... | Windsor, Pa..... | April 15, 1843. |
| Threshing-machines..... | H. Hizer and A. B. Crawford..... | Wooster, Ohio..... | June 14, 1843. |
| Threshing-machines..... | William Eaton, jr..... | Upper Alkon, Ill..... | July 28, 1843. |
| Winnowing-machines..... | George W. D. and Joseph Culp..... | Allensville, Ind..... | Aug. 4, 1843. |
| Winnowing-machines..... | James Starr..... | New Lisbon, Ohio..... | Sept. 9, 1843. |

CLASS II.—METALLURGY, and manufacture of metals, and instruments therefor.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|--|------------------------|--|
| Andirons, construction of..... | Edward Smylie..... | New York, N. Y..... | July 12, 1843. |
| Awl-hafts..... | Edwin Martin..... | Grafton, Mass..... | March 21, 1843. |
| Bolts, copper, uniting..... | Griffith Morgan..... | Onancock, Va..... | May 2, 1843. |
| Button, plate turn, for fastening cupboard and other doors..... | Philos, Eli W., and John A. Blake..... | New Haven, Conn..... | March 21, 1843; antedated Feb. 27, 1843. |
| Drilling iron, &c., machine for..... | Amos Morgan..... | Wooster, Ohio..... | July 20, 1843. |
| Drilling-machine..... | R. H. Springsteed..... | Wooster, Ohio..... | Feb. 20, 1843. |
| Dust, metallic particles, &c., produced during the operation of grinding, method of removing or discharging the..... | Thaddeus Fairbanks..... | St. Johnsbury, Vt..... | May 26, 1843. |
| Fasteners, shutter..... | John L. Whetstone and P. C. Guion..... | Cincinnati, Ohio..... | May 19, 1843. |

| | | | |
|---|---|-------------------------------|---|
| Forge bloomery, employed in the manufacture of wrought iron. | Simeon Guilford. | Lebanon, Pa. | Dec. 27, 1843. |
| Furnaces, construction and heading of, for all kinds of metallurgical operations. | Christian E. Detmold. | New York, N. Y. | July 15, 1843. |
| Gold washing, machine for. | Henry Bourne | Elberton, Ga. | Sept. 14, 1843. |
| Hinges, butt, casting. | Richard W. Belton. | Danville, Pa. | July 26, 1843. |
| Hinges, butt, forming the eyes of, machine for } | John F. Winslow, assignee of. | Troy, N. Y. | July 8, 1843. |
| Hinges, casting. | Welcome Whitaker | Albany, N. Y. | Jan. 20, 1843. |
| Hinges for piano-fortes, &c. | David Stuart and Charles C. Lloyd. | Danville, Pa. | June 3, 1843. |
| Hinges or butts for hanging and fastening window blinds and shutters. | Jonas Chickering, assignee of Rufus Perkins. | Boston, Mass. | Jan. 27, 1843. |
| Hooks and eyes for fastening garments. | Augustus C. Palmer. | Utica, N. Y. | Feb. 24, 1843. |
| Horse shoes, chain links, &c., machines for forming. | Charles Atwood. | Derby, Conn. | Aug. 11, 1843. |
| Horse shoes, machine for making | John F. Winslow and Thomas Osgood | Troy, N. Y. | Sept. 14, 1843. |
| Horse shoes, machine for making | Henry Burden | Troy, N. Y. | Dec. 27, 1843. |
| Iron, &c., punching holes in, machine for. | William Gibson | Troy, N. Y. | May 8, 1843. |
| Iron, sheet or plate, bending. | William Adams and A. Hammond. | Boston, Mass. | June 1, 1843. |
| Knives and forks, cleaning and polishing | John Watchman | Baltimore, Md. | Sept. 14, 1843. |
| Knobs, door, to their spindles, method of attaching. | Martin N. Armstrong | New York | Jan. 10, 1843. |
| Latch or fastener for window shutters and blinds | Enoch Robinson | Boston, Mass. | Feb. 24, 1843. |
| Locks and keys. | Arundel Hill | Stenbenville, Ohio. | Jan. 27, 1843. |
| Locks, combination safety, for doors, &c. | William Wilson | Northampton, Mass. | Oct. 20, 1843. |
| Locks, construction of. | Linus Yale and Charles Wilson. | Springfield, Mass. | June 14, 1843. |
| Locks, door and other. | Robert Newell. | New York, N. Y. | June 9, 1843. |
| Locks for safes, bank vaults, &c. | William & J. N. Tuttle, assignees of Chas. F. Voorhies. | Newark, N. J. | Aug. 17, 1843. |
| Locks or latches, door. | William Hall | Chelsea, Mass. | Nov. 21, 1843. |
| Lock or latch, door. | Theodore L. Littlefield | Philadelphia, Penn. | Oct. 18, 1843. |
| Locks or latch for doors, &c., compound lever } gravitating. | William Hall | Chelsea, Mass. | Feb. 20, 1843. |
| Metallic ropes. | Rhodolphus Kinsley, assignee of. | Springfield, Mass. | Aug. 30, 1846; patented in England Mar. 6, 1843. |
| | Samuel Noyes | Beverly, Mass. | Aug. 10, 1844; patented in England Nov. 18, 1843. |
| | Robert S. Newall | Gateshead upon Tyne, England. | |
| Metal, manufacture of. | Arthur Wall | Poplar, Blackwall, England | |

II.—*Expired patents for inventions.*

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|---|------------------------------|--|
| Metal, preparing, for being manufactured into wire. | Thomas Wallace..... | Derby, Conn..... | July 20, 1843. |
| Metal, sheet, machinery for working..... | Orrin and Noble Peck..... | Southington, Conn..... | April 25, 1843. |
| Metal, bending. (See Roofing, Class XIII.) | James Thompson and Halsey Rogers, assignees of Walter Hunt. | New York, N. Y..... | Oct. 12, 1843. |
| Nails, tacks, &c., feeding nail and tack plates, &c., into machines for cutting. | Nicholas Troughton..... | Swansea, England..... | July 22, 1844; patented in England, June 23, 1843. |
| Ores requiring washing, apparatus for separating or dressing. | John Laing..... | Bordentown, N. J..... | Mar. 30, 1843. |
| Pins, sticking into paper. (See Class XXII.) | Horatio Allen..... | New York..... | July 8, 1843; antedated June 29, 1843. |
| Pipes of lead and other soft metals, &c., machine for making. | James E. Serrell..... | New York, N. Y..... | Jan. 20, 1843. |
| Pipes, metal, determining the thickness of..... | Edmond J. Sause..... | New York, N. Y..... | Aug. 11, 1843. |
| Pipes, metallic, machinery and process of manufacturing. | Solyman Merrick, assignee of Jabez C. Terry. | Springfield, Mass..... | Feb. 20, 1843. |
| Plates, door..... | Luther Houghton..... | Philadelphia, Penn..... | April 15, 1842. |
| Rack wrench..... | Elijah Pratt..... | Washington county, N. Y..... | Sept. 14, 1843. |
| Rivets and nails for trunks, and other purposes. | Alexander Hodges, agent of New England Screw Co., assignee of Cullen Whipple. | Providence, R. I..... | April 10, 1843. |
| Saws, circular, stiffening, manner of..... | Alexander Hodges, agent of New England Screw Co., assignee of Cullen Whipple. | Providence, R. I..... | April 6, 1843. |
| Screws, wood, removing the burrs from the under sides of the heads of | John Williams, jr..... | Salem, N. Y..... | Mar. 4, 1843. |
| Screws, wood, turning or shaving the heads of blanks for. | Harry A. Wills..... | Keesville, N. Y..... | Mar. 21, 1843. |
| Screw wrench..... | Charles Ellis..... | Boston, Mass..... | Dec. 15, 1843. |
| Spikes, wrought iron..... | Charles C. Reinhardt..... | Baltimore, Md..... | June 24, 1843. |
| Spring, door, for closing doors..... | Cullins Manufacturing Company, assignee of Elisha K. Root. | Collinsville, Conn..... | Mar. 10, 1843. |
| Spurs, improvement in..... | Alexander B. Latta..... | Cincinnati, Ohio..... | Mar. 30, 1843. |
| Steel, tempering..... | | | |
| Stirrups for the paddle-wheels of steam and other boats, machine for bending the. | | | |

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|---|--|-----------------------|-----------------|
| Striker, blacksmiths', for forging iron | Ebenezer Brooks | Ridgville, Va | Feb. 13, 1843. |
| Tuyeres | Reuben A. Goodrich | Milford, N. Y. | Feb. 24, 1843. |
| Tuyeres | Lorenzo D. Brown | Lee, Mass. | June 14, 1843. |
| Tuyeres | Lewis E. Clow | Montpelier, Vt. | Sept. 23, 1843. |
| Tuyeres | Zadok H. Mann | Lowell, Mass. | Dec. 15, 1843. |
| Type-casting. (See Class XVIII.) | John S. Markham, assignee of E. G. Mat- thews. | Worcester, Mass. | Aug. 11, 1843. |
| Vices | Jeremiah Peck | Waterbury, Conn. | Dec. 20, 1843. |
| Wire. (See Metal.) | | | |

CLASS III.—MANUFACTURES OF FIBROUS AND TEXTILE SUBSTANCES, including machines for preparing fibres of wool, cotton, silk, fur, paper, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|---|---|--|
| Bags, for separating Elaine and stearine by pressure. | Martin H. Shepard | Cincinnati, Ohio | May 26, 1843. |
| Burrs, &c., picking, and separating from wool, also applicable to ginning cotton. | Francis A. Calvert | New York | June 3, 1843. |
| Burrs, cleaning, from wool, and seed from cotton, &c. | Theodore Ely | New York, N. Y. | Sept. 14, 1843. |
| Carding engine | John Boynton | South Coventry, Conn. | July 12, 1843, antedated Jan. 12, 1843. |
| Carding engines, feeding or delivering rollers of, arrangement of. | John and H. C. Gleason and N. D. White, assignees of Horace Barbour | Lowell, Mass. West Boylston, Mass. Lowell, Mass. | May 19, 1843. |
| Carding engines, machinery for making laps for feeding, &c. | John Mason | Rochdale, Great Britain | Feb. 10, 1843. |
| Cloth of all kinds, sewing, with a running stitch. Cloth, shearing. (See Shearing.) | Benjamin W. Bean | New York, N. Y. | Mar. 4, 1843. |
| Cotton bats or laps, making | John C. Smith and George C. Kellogg | New Hartford, Conn. | Feb. 20, 1843. |
| Cotton, cleaning, before ginning | Bornet Sanguine | Alexandria, La. | July 3, 1843. |
| Cotton, cleaning unginned | Robert M. Livingston | Mobile, Alabama | July 20, 1843. |

IV.—*Expired patents for inventions.*

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|---|---------------------------------|--|
| Flax and hemp, breaking | F. M. Barnes | Lexington, Mo. | Jan. 10, 1843. |
| Flax and hemp, breaking and cleaning | John Godden | Pittsburg, Iowa Territory | Jan. 20, 1843. |
| Flax and hemp, breaking and cleaning | William N. Stewart | May's Lick, Ky. | Feb. 4, 1843. |
| Flax and hemp, breaking and scutching, or cleaning. | Henry Johnson | Mayesville, Ky. | Mar. 4, 1843. |
| Gin, saw, for ginning cotton | H. H. Kelley | Port Gibson, Miss. | May 19, 1843. |
| Gin, saw, for ginning cotton | William B. Stewart | Cincinnati, Ohio. | May 19, 1843. |
| Hats and bonnets | Jonathan Dennis, Jr. | Portsmouth, R. I. | May 2, 1843. |
| Hats and bonnets of horsehair. | Charles L. Noe | New York, N. Y. | July 20, 1843. |
| Hats of leather. (See Class XVI.) | Pierre E. Ladrangé | Vignory, France | Oct. 16, 1844; patented in France, June 1, 1843. |
| Looms, knitting | John Coulter | Xenia, Ohio | April 25, 1843. |
| Looms, mode of delivering warp in. | R. P. Cunningham | Pomfret, Conn. | April 25, 1843. |
| Looms, power, mode of throwing shuttles in. | Frederick Downing | Enfield, Mass. | Jan. 27, 1843. |
| Loom, power, for weaving plain cloth. | David Farrior and D. P. J. Murphy | Aberfoil, Ala. | Dec. 4, 1843. |
| Loom, weaving | C. G. Gilroy | New York, N. Y. | April 15, 1843. |
| Loom for weaving figured fabrics | Gavin McCrae | Baltimore, Md. | Oct. 18, 1843. |
| Loom, weavers', for working any number of heddles. | Thaddeus Henry and Daniel Tibbals | Chatham, Conn. | July 8, 1843. |
| Oakum, machinery for the manufacture of. | Hargillai C. Smith | Burlington, N. J. | Nov. 21, 1843. |
| Paper, making cane hemp for making | John M. and Lyman Hollingsworth | Boston, Mass. | Dec. 4, 1843. |
| Paper making | Charles P. Barber | Watervliet, N. Y. | March 10, 1843. |
| Shearing diamond figures of cloths, &c., method of. | John W. Gill | Mount Pleasant, Ohio. | May 12, 1843. |
| Spinning, condensing or preparing cotton roving, &c., for. | Jacob Graves | New Ipswich, N. H. | Sept. 1, 1843. |
| Spinning cotton, wool, &c., machine for | Amander N. Wilcox | Milton, N. Y. | May 8, 1843. |
| Speeder, double speeder, or fly frame, used in roving cotton, &c. | William C. Davoll | Fall River, Mass. | May 19, 1843. |
| Sewing. (See Cloth.) | | | |

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| Threads or cords, worsted or other, dressing or finishing. | Benjamin B. Tilt and James Shinner | Roxbury, Mass | July 8, 1843. |
| Twine and small cord, machinery for making various kinds of. | Hugh McCubben | Petersburg, Va | Aug. 17, 1843. |
| Wool, combing | Francis A Calvert | New York, N. Y | Dec. 27, 1843. |
| Wool, combing | George E. Donisthorpe | Bradford, England | Sept. 11, 1844; patented in England Nov. 25, 1843. |
| Yarn, sizing, by steam | Hannibal A. Fletcher | Shelburne, Vt | July 8, 1843. |
| Yarn, tarring | John Thursby | Bushwick, N. Y | May 2, 1843. |

CLASS IV.—CHEMICAL PROCESSES, MANUFACTURES, AND COMPOUNDS, including medicine, dyeing, color making, distilling, soap and candle making, mortars, cements, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--------------------------------------|--------------------------|---|
| Blacking, tanners' flesh | Philip Havill and David Curran | Roscoe, Ohio | June 24, 1843. |
| Caoutchouc, application to cloths, &c | Edwin M. Chaffee | Roxbury, Mass | Aug. 31, 1836. |
| Chrome yellow, making | Richard A. Tighman | Philadelphia, Pa | Jan. 16, 1843. |
| Distilling alcohol | John T. Heard | Boston, Mass | Sept. 9, 1843. |
| Dyeing | Harmon Hibbard | Attica, N. Y | May 2, 1843. |
| Freezers, artificial | Nancy M. Johnson | Philadelphia, Pa | Sept. 9, 1843; antedated July 29. |
| Juices, saccharine, evaporating | Alfred Stillman | New York, N. Y | Aug. 17, 1843. |
| Matches, friction | Alonso D. Phillips | Springfield, Mass | Oct. 24, 1836. |
| Matches, friction | William K. Athard | New York, N. Y | June 24, 1843. |
| Oils, volatile, for the purposes of illumination, mode of using | B. F. Greenough | Boston, Mass | Nov. 15, 1843. |
| Salt, &c., manufacture of | Hervey Smith | Salina, N. Y | July 12, 1843. |
| Salt boiler | R. Griffin and L. Y. Avery | Salina, N. Y | Mar. 21, 1843. |
| Salt, crystallizing | Beriah Douglas | Albany, N. Y | Sept. 23, 1843. |
| Salt, making | Isaac Noyes | Kanawha Saline, Va | Aug. 26, 1843. |
| Silvering looking-glasses | Thomas Drayton | Brighton, England | Aug. 12, 1844; patented in England Nov. 25, 1843. |

IV.—*Expired patents for inventions.*

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|-------------------------|---------------------------|---|
| Slates, artificial writing..... | John Street..... | Philadelphia, Pa..... | Nov. 21, 1843. |
| Soaps and oils, purifying..... | Arthur Dunn..... | Rotherhithe, England..... | Dec. 4, 1844; patented in England Nov. 9, 1843. |
| Sugar boilers..... | William Graham..... | St. Charles, La..... | Mar. 10, 1843. |
| Tobacco, chewing, preparing..... | Eben. Goodwin..... | New York, N. Y..... | Feb. 16, 1843. |
| Vegetable elixir, for the cure of bronchitis, &c..... | Peter Faulkner..... | Rockville, Pa..... | Sept. 23, 1843. |
| Vegetable extracts, making..... | Benjamin Brandreth..... | New York, N. Y..... | Jan. 20, 1843. |
| White lead, manufacture of..... | Smith Gardner..... | New York, N. Y..... | Aug. 26, 1843. |

CLASS V.—*CALORIFICS, comprising lamps, fire-places, stoves, grates, furnaces for heating buildings, cooking apparatus, preparation of fuel, &c.*

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|--|------------------------|---|
| Caboozes, ships'..... | James Wilson..... | New York, N. Y..... | Aug. 17, 1843; antedated Feb. 17, 1843. |
| Chimney cowls..... | Palmer Sumner..... | New York, N. Y..... | Feb. 20, 1843. |
| Coal, breaking and screening..... | Hopkins Thomas..... | Beaver Meadow, Pa..... | Dec. 5, 1843. |
| Flues, furnaces, &c., machine for creating draught in..... | Thaddeus Fairbanks..... | St. Johnsbury, Vt..... | May 26, 1843. |
| Furnaces, air-heating..... | Gurdon Fox..... | Hartford, Conn..... | Mar. 10, 1843. |
| Grate bars..... | William Ferrell..... | Charleston, S. C..... | April 26, 1843. |
| Heat, generating, by hydrogen gas..... | Lewis A Hall..... | Newark, N. J..... | June 3, 1843; antedated June 1, 1843. |
| Lamp, alcohol, for medicated vapor bath..... | L. E Hicks, assignor to G. L. F. Griswold..... | Middletown, Conn..... | Mar. 16, 1844; antedated Dec. 15, 1843. |
| Lamps..... | Samuel Rust..... | New York, N. Y..... | Sept. 14, 1843. |

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| Lamps..... | Stephen J. Gold..... | Cornwall, Conn..... | May 8, 1843. |
| Lamps, lard..... | Charles Wilhelm..... | Philadelphia, Pa..... | April 6, 1843. |
| Lamps, lard..... | R P Benton..... | Norwalk, Ohio..... | April 10, 1843. |
| Lamps, lard..... | Harvey Tumlinson..... | Geneva, N. Y..... | Sept. 1, 1843. |
| Lamps, lard..... | Henry Rose..... | Rushville, Ill..... | Aug. 4, 1843. |
| Lamps, lard..... | Horace Howard..... | Wootter, Ohio..... | Feb. 10, 1843. |
| Lamps, lard..... | Luther Jones..... | Utica, N. Y..... | May 26, 1843. |
| Lamps, lard..... | Patrick J. Clark..... | Meriden, Conn..... | Mar 21, 1843. |
| Lamps, lard..... | Robert Cornelius..... | Philadelphia, Pa..... | April 6, 1843; antedated |
| Lamps, lard..... | Silas B. Terry..... | Plymouth, Conn..... | April 1, 1843. |
| Lamps, lard..... | Thomas Houghton and John F. Wallace..... | Philadelphia, Pa..... | Feb. 24, 1843. |
| Lamps, lard..... | William S. Moore..... | Springfield, Ill..... | Nov. 15, 1843. |
| Lamps, lard..... | William Thompson..... | Cincinnati, Ohio..... | Feb. 10, 1843. |
| Lamps, lard..... | Robert Cornelius..... | Philadelphia, Pa..... | April 10, 1843. |
| Lamps, lard, with argand burners..... | Robert Cornelius..... | Philadelphia, Pa..... | April 6, 1843; antedated |
| Oil-feeders..... | Robert Cornelius..... | Philadelphia, Pa..... | April 1, 1843. |
| Ovens. (See Stoves.) | | | April 6, 1843; antedated |
| Ovens for cooling and annealing glass. (See Glass, Class XV.) | | | April 1, 1843. |
| Ranges, cooking..... | Moses Pond..... | Boston, Mass..... | Mar. 4, 1843. |
| Steam-generator, portable..... | Stephen Atwater..... | Rochester, N. Y..... | Jan. 20, 1843. |
| Stoves..... | James Robb..... | Lewistown, Pa..... | Aug. 4, 1843. |
| Stoves..... | James Taylor..... | Peekskill, N. Y..... | May 2, 1843. |
| Stoves..... | Reuben Elmendorf..... | Kingston, N. Y..... | April 25, 1843. |
| Stoves..... | Richard W. Helson..... | Danville, Pa..... | June 1, 1843. |
| Stoves, air-heating..... | Charles B. Boynton..... | Houatonic, Mass..... | Feb. 20, 1843. |
| Stoves, cooking..... | Albert D. Hart..... | Pittsfield, Mass..... | July 8, 1843. |
| Stoves, cooking..... | Alpheus Cooper..... | Danville, Pa..... | Oct. 25, 1843. |
| Stoves, cooking..... | Benjamin T. Ronney..... | Milton, Pa..... | Oct. 25, 1843. |
| Stoves, cooking..... | Charles Postley..... | New York, N. Y..... | June 9, 1843. |
| Stoves, cooking..... | Henry T. Butler, assignee of Laban Eddy..... | Taunton, Mass..... | Oct. 18, 1843. |
| Stoves, cooking..... | J. J. Anderson..... | Putnam, Ohio..... | Aug. 17, 1843. |
| Stoves, cooking..... | James Greer..... | Dayton, Ohio..... | May 12, 1843. |
| Stoves, cooking..... | Joel Green..... | Rochester, N. Y..... | Aug. 11, 1843. |
| Stoves, cooking..... | John Curtis..... | Auburn, N. Y..... | Jan. 27, 1843. |
| Stoves, cooking..... | Pinner Emmitt..... | York, Pa..... | June 14, 1843. |
| Stoves, cooking..... | Samuel B. Sexton..... | Baltimore, Md..... | Sept. 23, 1843. |

V.—Expired patents for inventions.

| Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|--|-----------------------------|----------------------|--|
| Stoves, cooking..... | John E. Thomas | Albany, N. Y. | Nov. 6, 1843. |
| Stoves, cooking..... | Jordan L. Mott | New York, N. Y. | Feb. 12, 1844; antedated Dec. 1, 1843. |
| Stoves, cooking and air-heating | Benjamin Shepard | Boston, Mass. | Sept. 1, 1843. |
| Stoves with elevated ovens..... | Samuel B. Spaulding | Brandon, Vt. | Mar. 30, 1843. |
| Stoves | Herbert H. Simpson | Boston, Mass. | Jan. 20, 1843. |
| Stoves, hot-air..... | Moses Pond | Boston, Mass. | Sept. 1, 1843. |
| Stoves with revolving ovens..... | J. H. & N. P. Hayward | Baltimore, Md. | May 8, 1843. |
| Temperature, instruments for regulating..... | David B. Van Tuyl | Dayton, Ohio..... | Oct. 12, 1843. |

CLASS VI.—STEAM AND GAS ENGINES, including boilers and furnaces therefor, and parts thereof.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|--|------------------------|-----------------|
| Boilers, steam, &c., effecting combustion in furnaces and flues of | Christian E. Detmold | New York..... | Dec. 4, 1843. |
| Boiler, steam, constructing | Zenas C. Robbins | St. Louis, Mo. | July 28, 1843. |
| Boilers, steam, safety-valves for | William Duff | Baltimore, Md. | July 29, 1843. |
| Boilers, steam, safety-valves for | William P. McConnell | Washington, D. C. | May 19, 1843. |
| Boilers, tubular, constructing, for generating steam..... | Charles W. Butler | Baltimore, Md. | Sept. 1, 1843. |
| Furnaces for steam-boilers | Gideon Shryock and Samuel Underwood..... | Louisville, Ky. | Sept. 14, 1843. |
| Spark-arresters | John A. Roebing | Saxonsburg, Penn. | Feb. 16, 1843. |
| Spark-arresters | Zibson Wilbur | Allegheny, Penn. | Jan. 10, 1843. |
| Steam-engines, air-pump used in low-pressure or condensing..... | Charles Reeder | Baltimore, Md. | Nov. 15, 1843. |
| Steam-engines, condensers of | Henry K. Stephens..... | Cincinnati, Ohio..... | Dec. 4, 1843. |

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| Steam-engines, high-pressure, mode of heating the supply water and carrying off the escape steam in. | Nathan Cope | Hanover, Ohio | Feb. 20, 1843. |
| Steam-engines, horizontal, pistons and slide-valves for. | Benjamin H. Brown | Philadelphia, Penn | Sept. 1, 1843. |
| Steam-engine, inlet reacting rotary, improvements in the. | Charles Collins, assignee of James Pilbrow | Kidderminster, England | June 14, 1843. |
| Steam-engines, locomotive. | Ross Winans | Tottingham Green, England | July 28, 1843. |
| Steam-engines, pistons and stuffing-boxes of. | Elijah H. and Cyrus Eversole | Baltimore, Md | July 20, 1843. |
| Steam-engines, rotary. | Alexander K. and William S. Elder | St. Louis, Mo | April 10, 1843. |
| Steam-engine, rotary. | Ebenezer Ferren | New York, N. Y. | Nov. 15, 1843. |
| Steam-engine, rotary. | Royal C. Grant | Haverhill, N. H. | Dec. 4, 1843. |
| Steam-engines, valves for reversing the action of. | Nicolas H. J. F. Comte de Crouy | Pomeroy, Ohio | Dec. 4, 1843. |
| Steam-engines, valves for opening and closing the. | Henry A. Morrill | England | June 14, 1843. |
| | Frederick E. Sickels | Boston, Massachusetts | Dec. 20, 1843. |
| | | New York | July 20, 1843. |

CLASS VII.—NAVIGATION AND MARITIME IMPLEMENTS, comprising all vessels for conveyance on water, their construction, rigging, and propulsion, diving-dresses, life-preservers, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|------------------------|-------------------------|-----------------|
| Constructing canal boats so that they can be transferred on railroad cars. | John Dougherty | Philadelphia, Pa. | Feb. 24, 1843. |
| Constructing steam and other boats to prevent them from sinking when they come in collision with snags, sawyers, &c. | Horace D. Forbes | New York, N. Y. | Feb. 16, 1843. |
| Fender to protect boats against injury from snags and sawyers. | Josiah W. Kirk | Philadelphia, Pa. | Feb. 24, 1843. |
| Life-boat. | Lewis Raymond | New York, N. Y. | Feb. 4, 1843. |
| Life-preserver for the use of steamboats, &c. | Michael Pearson | Newburyport, Mass. | Jan. 27, 1843. |
| Propelling boats. | James H. Street | Philadelphia, Pa. | Dec. 27, 1843. |
| Propellers, submerged. | Horace Everett | Windsor, Vt. | June 9, 1843. |
| Propelling vessels by means of continuous streams of water. | Robert Schuyler | New York, N. Y. | March 17, 1843. |

VII.—Expired patents for inventions.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|-------------------|------------------|-----------------|
| Propelling vessels by the buoyancy of air in water acting against inclined surfaces. | Sylvester W. Hall | Troy, N. Y. | Nov 6, 1843. |
| Propelling vessels, paddles for, endless chain. | Beriah Douglas | Albany, N. Y. | Sept. 28, 1843. |
| Steamboats, &c., bailing wheel for raising water from the hold of. | Hornoe D. Forbes | New York, N. Y. | May 26, 1843. |
| Steamboats, preventing, from sinking. | Lovel G. Mickles | New York | April 25, 1843. |
| Tides and currents, representation of. | Benjamin F. Watts | Fort Gaines, Ga. | Sept. 1, 1843. |
| Vessel, ascertaining the centre of gravity and sailing trim of a. | John Hobday | Portsmouth, Va. | Sept. 14, 1843. |
| Vessels, connecting the tiller with the rudder-head of. | Henry Waterman | Bath, Me. | May 26, 1843. |

CLASS VIII.—MATHEMATICAL, PHILOSOPHICAL, AND OPTICAL INSTRUMENTS, including clocks, chronometers, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-----------------------------------|---|-----------------|--|
| Clocks. | Charles Kirk | Bristol, Conn. | Aug. 26, 1843. |
| Electricity, copying surfaces by. | Alexander Bain | London, England | Dec. 5, 1843; patented in England May 2, 1843. |
| Electrifying machine | Ezekiel Cole, administrator of Elijah Cole, deceased. | Richmond, Ohio | July 22, 1843. |
| Galvanic batteries. | John Plumb, jr. | Boston, Mass. | March 4, 1843. |
| Globes. | Gilbert Vale | New York, N. Y. | Oct. 23, 1843. |
| Rules, sliding. | John P. Smith | New York, N. Y. | Jan. 16, 1843. |
| Sun-dials. | James P. Gardner | Columbia, Tenn. | Dec. 5, 1843. |
| Surveying instruments. | George D. Varney | Newbury, Mass. | June 24, 1843. |
| Watches. | Jacob D. Custer | Norristown, Pa. | Feb. 4, 1843. |

CLASS IX.—CIVIL ENGINEERING AND ARCHITECTURE, comprising works on rail and common roads, bridges, canals, wharves, docks, rivers, weirs, dams, and other internal improvements, buildings, roofs, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--|--------------------------|---|
| Bridges and other structures, increasing the effective strength of beams or rafters of wood or other materials used in. | John R. Remington..... | Lowndes county, Ala..... | May 19, 1843. |
| Duck, floating dry, method of working a, in connection with a platform and basin, by means of which vessels can be raised and deposited on bed or railways, &c. | Rutherford Moody, and Samuel D. Dakin .. | New York, N. Y..... | Nov. 24, 1843. |
| Doors, gates, &c., closing apparatus for..... | Gardner Barton, jr..... | Waterford, N. Y..... | Sept. 23, 1843. |
| Drill for drilling or boring rock..... | Uriah Higgins..... | Boston, Mass..... | May 2, 1843. |
| Fences..... | Isaac Vanamberg..... | Watertown, N. Y..... | Dec. 20, 1843. |
| Marine railway..... | Andrew Flannigan..... | Baltimore, Md..... | Jan. 16, 1843. |
| Pipes, metallic, introducing wire into..... | Samuel F. B. Morse..... | New York..... | Oct. 25, 1843. |
| Roofing, metal, constructing, for houses..... | John G. Woodin..... | Cincinnati, Ohio..... | July 8, 1843. |
| Roofing houses, machinery for bending metal plates for. | John Iggett..... | Albany, N. Y..... | July 15, 1843. |
| Rut shears for repairing and improving roads..... | Samuel Mallory..... | Alexander, N. Y..... | July 26, 1843. |
| Staircases in buildings, arranging..... | William P. Gibbs..... | Boston, Mass..... | June 14, 1813. |
| Staircases, sweeping or cleaning..... | Alexander Jones..... | New York, N. Y..... | July 28, 1843. |
| Streets, sweeping..... | Pliny Robinson..... | Leonardville, N. Y..... | July 20, 1843. |
| Streets, sweeping..... | Thomas Mussey..... | New London, Conn..... | Oct. 12, 1813; antedated June 17, 1843. |

CLASS X.—LAND CONVEYANCE, comprising carriages, cars, and other vehicles used on roads, and parts thereof.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|---|--------------------------|-----------------|
| Axles of railroad cars..... | Nathaniel Miller and Edward Banoroff..... | Franklin, Mass..... | Dec. 15, 1843. |
| Brakes for railroad cars, &c..... | Henry C. Sides..... | Providence, R. I..... | July 12, 1843. |
| Brakes for retarding carriages in descending hills, &c. | Moses S. Woodward..... | Baltimore, Md..... | Dec. 4, 1843. |
| Carriages, disengaging horses from..... | David Little..... | Marshallton, Pa..... | March 30, 1843. |
| Carriages, four-wheeled, coupling..... | Alfred Osgood..... | Gettysburg, Pa..... | Jan. 27, 1843. |
| Carriage, four-wheel, coupling the forward axle of a, with the reach and head block or rocker. | Alexander H. Hart..... | Charlestown, Ohio..... | Sept. 23, 1843. |
| Carriages of locomotive steam-engines..... | William Norris, assignee of Septimus Norris and William Knight. | Chagrin Falls, Ohio..... | Feb. 10, 1843. |
| Cars for removing gravel and earth on railroads. | Granville Palmer..... | Philadelphia, Pa..... | Jan. 16, 1843. |
| Springs to carriages, manner of applying..... | John S. Tough..... | Greenbush, N. Y..... | June 9, 1843. |
| Springs for railroad cars..... | James Millholland..... | Baltimore, Md..... | Sept. 23, 1843. |
| Wagon boxes, moulds for casting..... | Horace Wood..... | Baltimore, Md..... | July 8, 1843. |
| Wheels, carriage, immersing, in water after putting on the hoop or tire. | James Mollineux..... | Greenwich, N. Y..... | July 12, 1843. |
| Wheels, cast iron, for locomotive steam-engines, cars, trucks, &c., constructing. | James Morris..... | Northampton, Pa..... | Sept. 23, 1843. |
| Wheels, railroad car, constructing..... | Thatcher Perkins and William McMahon..... | Bloomfield, N. J..... | April 10, 1843. |
| | William Creed..... | Baltimore, Md..... | Feb. 24, 1843. |
| | | Boston, Mass..... | |

CLASS XI.—HYDRAULICS AND PNEUMATICS, including water-wheels, wind-mills, and other implements operated on by air or water, or employed in the raising and delivery of fluids.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|-------------------------------------|------------------------|--------------------------|
| Air-pump in low-pressure engines. (See Class VI.) | Alvin Savage and Hervey Killam..... | Scottsville, N. Y..... | Nov. 24, 1843. |
| Bellows, rotary..... | Rufus Smerby..... | Louisville, Ky..... | Nov. 15, 1843. |
| Blow-pipes, table..... | Oliver H. and Charles H. Bush..... | Fall River, Mass..... | Mar. 30, 1843. |
| Boring. (See Pipes.) | S. C. Higbie..... | Oppenheim, N. Y..... | Sept. 1, 1843. |
| Gates, liquor..... | Thomas A. Davis..... | New York, N. Y..... | May 12, 1843. |
| Hydrants..... | Robert K. Colvin..... | Columbia, Pa..... | July 20, 1843. |
| Hydrants, construction of..... | Horatio H. C. Kelsey..... | New York, N. Y..... | Dec. 15, 1843. |
| Hydrants, valves for..... | S. C. Higbie..... | Oppenheim, N. Y..... | Mar. 21, 1843. |
| Pumps..... | Francis Joseph Miller..... | New York..... | Nov. 21, 1843. |
| Stop-cocks..... | Charles Willson..... | New York, N. Y..... | Oct. 24, 1843. |
| Stop-cocks, connecting, for hydraulic presses..... | Henry R. Dunham..... | New York, N. Y..... | Jan. 10, 1843. |
| Stop-cocks for hydrants..... | Horatio Allen..... | New York, N. Y..... | Nov. 21, 1843. |
| Stop-cocks in pipes under hydrostatic pressure, tapping and inserting..... | Horatio Allen..... | New York, N. Y..... | Oct. 25, 1843. |
| Stops, elastic water, for checking the force or momentum of water in pipes..... | Amasa B. Beckwith..... | Bath, N. Y..... | Oct. 20, 1843. |
| Water-wheels..... | Chadiah Aylsworth..... | Bainbridge, N. Y..... | June 24, 1843. |
| Water-wheels..... | Daniel H. Parsons..... | Chester, Ohio..... | July 12, 1843. |
| Water-wheels..... | Daniel Stearns..... | Rome, N. Y..... | Sept. 14, 1843. |
| Water-wheels..... | John Caldwell..... | Northfield, Mass..... | Aug. 4, 1843. |
| Water-wheels..... | Samuel Hopper..... | Lewistown, Pa..... | Mar. 23, 1843; antedated |
| Water-wheels..... | Stiles Munger..... | Shawanyunk, N. Y..... | Mar. 21, '43. |
| Water-wheels..... | Philip Wells..... | Millford, Mich..... | Feb. 10, 1843. |
| Water-wheels, inclined..... | Abraham Baker..... | Dalton, Ohio..... | Mar. 4, 1843. |
| Water-wheels, penstocks for..... | Nelson Johnson..... | Triangle, N. Y..... | Sept. 23, 1843. |
| Water-wheels, steam-engines, &c., regulating the motion of..... | Nathan Schofield..... | Norwich, Conn..... | April 15, 1843. |
| | | | May 17, 1836. |

CLASS XII.—LEVER, SCREW, AND OTHER MECHANICAL POWER, as applied to pressing, weighing, raising, and moving weights.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--------------------------------------|---|-------------------------------|-----------------|
| Balances | Benjamin Morrill | Bocawen, N. H. | May 26, 1843. |
| Presses | William B. Leonard | Mattawan Works, N. Y. | Feb. 20, 1843. |
| Press, cheese, construction of | Hartwell Kendall | Danby, Vt. | July 15, 1843. |
| Presses, cotton | John R. Remington | Montgomery, Ala. | April 15, 1843. |
| Presses, cotton | Josias Chabbers | Alexandria, La. | May 19, 1843. |
| Presses, cotton | Otis Whitney | Augusta, Me. | Mar. 17, 1843. |
| Presses, cotton | Seth Lamb | New York, N. Y. | May 12, 1843. |
| Presses, cotton | William F. and Charles J. Provost | Barnwell District, S. C. | Nov. 21, 1843. |
| Presses, cotton | Thomas W. Harvey | New York, N. Y. | Feb. 4, 1843. |
| Presses, cotton and hay | William Bullock | Jersey City, N. J. | Sept. 28, 1843. |
| Presses, portable screw | Alexander Hallam | New Orleans, La. | Sept. 14, 1843. |
| Presses, hay | Levi Dederick | Kinderhook, N. Y. | Sept. 24, 1843. |
| Scales, counter | Eliphalet H. Parker | Bucksport, Me. | May 26, 1843. |
| Seals, notarial | John Fraser | New York, N. Y. | June 9, 1843. |
| Windlass, ship's | William Adams and Artemas Hammond, assignees of Artemas Hammond. | Boston, Mass. | Oct. 6, 1843. |

CLASS XIII.—GRINDING-MILLS AND MILL-GEARING, including grain mills, mechanical movements, and horse-powers.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|----------------------------|-------------------------|-----------------|
| Bark-mill | Backus A. Beardsley | Fangerfield, N. Y. | Feb. 4, 1843. |
| Coffee-mills | John Luther | Warren, R. I. | Aug. 11, 1843. |
| Grinding corn with the cob, mill for | James M. Miller | Mobile, Ala. | Jan. 20, 1843. |
| Grinding grain, &c., mills for | Francis Price | New York, N. Y. | Feb. 20, 1843. |
| Grist-mills | Clark B. Gregory | Danbury, Conn. | Feb. 16, 1843. |
| Grist-mill | Josiah Platt | Weston, Conn. | Sept. 28, 1843. |
| Horse-power for driving machinery | Luke S. Rand | Townshend, Vt. | Mar. 4, 1843. |
| Horse-power, endless chain | Salmon, Richards | East Poultney, Vt. | Oct. 28, 1843. |
| Horse-power, portable | Israel J. Richardson | New York, N. Y. | Aug. 26, 1843. |
| Pulleys, coupling and uncoupling with their shafts. | Peter Yates | Milwaukee, Wis. | April 25, 1843. |

CLASS XIV.—LUMBER, including machines and tools for preparing and manufacturing, such as sawing, planing, mortising, shingle and stove, carpenters' and coopers' implements.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|----------------------------|----------------------------|-----------------|
| Augers..... | Raymond French..... | Derby, Conn..... | July 20, 1843. |
| Clapboards, beveling the ends of..... | Samuel W. Curtis..... | Stoughton, Mass..... | May 26, 1843. |
| Clapboards, sawing, machines for..... | Daniel Bartholomew..... | Wolcott, Vt..... | July 8, 1843. |
| Clapboards, sawing, machines for..... | Daniel Newton..... | Dalton, N. H..... | July 20, 1843. |
| Dye-woods, cutting and shaving..... | Beriah Swift..... | Washington, N. Y..... | Aug. 10, 1836. |
| Hoops, coopers', making out of split timber..... | James McWhorter..... | Brookville, Ind..... | Nov. 6, 1843. |
| Irregular forms, turning or cutting..... | Thomas Blanchard..... | Roston, Mass..... | Mar. 21, 1843. |
| Mortising hubs, machinery for..... | Archibald Thompson..... | Ridgeville, Md..... | April 25, 1843. |
| Plane stock, cast iron..... | William Foster..... | Washington, D. C..... | Nov. 24, 1843. |
| Saw-guides, mill..... | Jonathan Norcross..... | Eatonton, Ga..... | Aug. 4, 1843. |
| Sawing and planing, by combining the plane with a saw..... | Elijah Pratt..... | North Granville, N. Y..... | July 20, 1843. |
| Sawing, curvilinear and compound level, machinery for..... | James Hamilton..... | New York, N. Y..... | April 15, 1843. |
| Saw-mills..... | John E. Kenderdine..... | Lumberton, Pa..... | Mar. 10, 1843. |
| Saw-mill, self-setting head and tail block for..... | Levi Heald..... | Bartlett, Ohio..... | June 3, 1843. |
| Saw-mill for sawing timber with a direct or compound bevel..... | James Hamilton..... | New York, N. Y..... | Nov. 21, 1843. |
| Shingles, cutting..... | Jason C. Gillett..... | Bloomfield, Mich..... | Dec. 20, 1843. |
| Shingles, sawing..... | Elnathan Sampson..... | Piermont, N. H..... | Jan. 10, 1843. |
| Shingles, sawing, constructing machine for..... | George L. Day..... | Union, N. Y..... | Feb. 4, 1843. |
| Shingles, veneers, &c., machine for cutting..... | Robert A. Quartermass..... | Auburn, Mich..... | Aug. 17, 1843. |
| Timber, &c., boring machine for..... | Riley Smith..... | Towanda, Pa..... | Feb. 10, 1843. |
| Timber, fire-wood, &c., cross-cutting machine for..... | Thomas J. Marsh..... | Liberty, Ind..... | Sept. 28, 1843. |
| Veneers, cutting..... | William Foster..... | New York, N. Y..... | Sept. 1, 1843. |
| Veneers, cutting and straightening, and other pieces of wood..... | Chauncey E. Warner..... | New York, N. Y..... | Dec. 4, 1843. |

CLASS XV.—STONE AND CLAY MANUFACTURES, including machines for pottery, glass-making, brick-making, dressing and preparing stone, cements, and other building materials.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|-----------------------|--------------------------|-----------------|
| Brick-machines | Lee Montgomery | Tunnel, Md. | July 8, 1843. |
| Brick-machine for moulding | J. Parsons Owen | Upper Alton, Ill. | April 10, 1843. |
| Brick-presses | Arad Woodworth | Worcester, Mass. | May 8, 1843. |
| Glass, cooling and annealing, ovens for | John Frank | Milville, N. J. | May 12, 1843. |
| Glass, flattening and annealing | Samuel Richards | Philadelphia, Penn. | April 6, 1843. |
| Slates, artificial. (See Class IV.) | | | |

CLASS XVI.—LEATHER, including tanning and dressing, manufacture of boots, shoes, saddlery, harness, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--|--------------------------|-----------------|
| Boot-cripps | Ell P. Drake | Troy, N. Y. | Nov. 15, 1843. |
| Boots and shoes, soles of | Robt. B. Ruggles, assignee of Walter Hunt. | New York, N. Y. | Aug. 17, 1843. |
| Boots and shoes, soles of | William H. Elsgood | Philadelphia, Penn. | Dec. 20, 1843. |
| Boots, making | James Turnbull | Philadelphia, Penn. | June 24, 1843. |
| Collars, horse, constructing | Nathan Post | Madrid, N. Y. | July 22, 1843. |
| Leather, India rubber, &c., machines for making hats of | Sewall Gleason | New York, N. Y. | Nov. 24, 1843. |
| Leather rollers | John Gardner | Petersburg, Va. | April 25, 1843. |
| Saddles, spring | Robert Spencer | New York, N. Y. | Nov. 24, 1843. |
| Sewing cloth. (See Class III.) | | | |
| Sewing, machine for | George H. Corlies | Greenwich, N. Y. | Dec. 27, 1843. |
| Straps, coupling, method of, as a substitute for a buckle | Lyman & J. H. Beebe | Penfield, N. Y. | Mar. 10, 1843. |
| Trunks, travelling | John W. Beachley | Philadelphia, Penn. | May 26, 1843. |

CLASS XVII.—HOUSEHOLD FURNITURE, machines and implements for domestic purposes, including washing-machines, bread and cracker-machines, feather-dressing, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|---------------------------|-------------------------|---|
| Bedsteads..... | John Morris..... | Derby, Conn..... | July 8, 1843. |
| Bedstead fastenings..... | Joseph Guild..... | Cincinnati, Ohio..... | Dec. 20, 1843. |
| Bedsteads, sofa..... | Alexander D. Farrell..... | New York, N. Y..... | May 2, 1843. |
| Bedsteads, sofa..... | William Clowes..... | Hartwood, N. Y..... | June 24, 1843. |
| Bells, house, hanging..... | Edward Stetson..... | New Bedford, Mass..... | Aug. 17, 1843. |
| Bread, making, constructing machines for..... | William Carr..... | Bath, Maine..... | July 22, 1843. |
| Brooms, winding wire or twine on..... | William Beaman..... | Salem, N. J..... | Aug. 17, 1843. |
| Chairs, rocking..... | Charles A. Ballard..... | Boston, Mass..... | Dec. 5, 1843. |
| Cradle-rockers..... | Henry R. Taylor..... | Roxbury, Mass..... | Jan. 16, 1843. |
| Dough, breaking, machine for..... | Luke Shaw..... | Bath, Maine..... | May 26, 1843. |
| Extension tables..... | Cornelius Briggs..... | Roxbury, Mass..... | Sept. 1, 1843. |
| Extension tables..... | Edward Richards..... | New York, N. Y..... | April 15, 1843. |
| Meat-cutters..... | Harry H. Everts..... | Mount Morris, N. Y..... | Oct. 12, 1843. |
| Mop irons..... | Salmon Johnson..... | Lee, N. Y..... | Oct. 18, 1843. |
| Quilting frames, couplings for..... | Joseph W. Webb..... | Mount Morris, N. Y..... | Mar. 30, 1843. |
| Safes, &c., to protect them from insects..... | Robert Sanderson..... | Athens, Ohio..... | Jan. 10, 1843. |
| Vegetable-cutters..... | Joseph W. Webb..... | Mount Morris, N. Y..... | April 10, 1843. |
| Washing machine..... | Arthur Mitchell..... | Aberdeen, Ohio..... | Nov. 6, 1843. |
| Washing machine..... | James Hutchinson..... | Marineburg, Va..... | Oct. 23, 1843. |
| Washing-machine..... | John Shugert..... | Elizabeth, Pa..... | May 19, 1843; antedated May 1, 1843. |
| Washing-machine..... | Joseph C. Rich..... | Penfield, N. Y..... | Oct. 12, 1843; antedated April 3, 1843. |
| Washing-machine. (See Class III, Rags.) | | | |

CLASS XVIII.—ARTS POLITE, FINE, AND ORNAMENTAL, including music, painting, sculpture, engraving, books, paper, printing, binding, jewelry, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--|---------------------------------------|-----------------|
| Daguerreotype pictures, coloring | Montgomery P. Simons, assignee of Warren Thompson. | Philadelphia, Penn | May 12, 1843. |
| Engraving, machines for | Ethan Allen..... | Grafton, Mass | Jan. 16, 1843. |
| Gilding, silvering, &c., in dead colors | Daniel Davis, jr..... | Boston, Mass | Mar. 21, 1843. |
| Leaf-holders | Joseph Nock | Washington city, D. C. | Aug. 11, 1843. |
| Pencils, tailors' marking | William Coover..... | Erie, Penn. | Aug. 26, 1843. |
| Pen-holders | Albert Alden | Barre, Mass | Mar. 4, 1843. |
| Pens, fountain | Nelson Bartlett | Canajoharie, N. Y. | Sept. 9, 1843. |
| Piano-fortes | Edwin Brown | Boston, Mass | Jan. 27, 1843. |
| Piano-fortes | George Hewes and Richard C. Marsh, and Nath'l W. Tileston..... | Boston, Mass. | April 10, 1843. |
| Piano-fortes | Jones Chickering..... | Boston, Mass. | Sept. 1, 1843. |
| Printing, machines for | Charles Thurber | Worcester, Mass. | Aug. 26, 1843. |
| Type-casting machines | David Bruce, jr..... | Williamsburg, Long Island, N. Y. | Nov. 6, 1843. |
| Type-casting | James Stewart..... | New York, N. Y. | Mar. 21, 1843. |

CLASS XIX.—FIRE-ARMS AND IMPLEMENTS OF WAR, and parts thereof, including the manufacture of shot and gunpowder.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|-------------------------------------|--------------------------|-----------------|
| Cannon balls or shot, bomb-shells, &c., casting, mode of forming moulds for. | Abiel Elliott..... | Philadelphia, Penn | Oct. 6, 1843. |
| Cannon, wrought iron, making. | Salmon Hunt, administrator of | Wolcottville, Conn. | Nov. 24, 1843. |
| Fire-arms, attached muzzle for | Salmon Hunt..... | Torrington, Conn. | June 1, 1843. |
| Fort, iron, construction of..... | Philo S. Newton | Hartford, Conn. | Jan. 27, 1843. |
| | E. G. Woodman | Lowell, Mass. | |

May 19, 1843.

Guns, stocking, and other purposes, method of attaching bits eccentrically to their arbors, to be used in machinery for.

Samuel D. Sizer

Springfield, Mass.....

CLASS XX.—SURGICAL AND MEDICAL INSTRUMENTS, including trusses, dental instruments, bathing apparatus, &c.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--|--------------------------|-----------------|
| Baths, medicated vapor..... | Morris Matteson | Boston, Mass | Sept. 28, 1843. |
| Baths, shower | Stephen Bates..... | Dedham, Mass..... | Oct. 12, 1843. |
| Bath, shower, portable | Nathaniel Waterman | Boston, Mass | Aug. 11, 1843. |
| Bougies for strictures | Robert J. Dodd | Philadelphia, Penn | Oct. 6, 1843. |
| Breathing tubes | Jacob S. Rose | Philadelphia, Penn | May 8, 1843. |
| Dilators, reducing, apparatus for | George O. Jarvis | Portland, Conn | Sept. 14, 1843. |
| Hernia, cure of, by means of injections | Charles T. Sage | New York, N. Y..... | Jan. 10, 1843. |
| Pessaries for prolapsus uteri..... | Samuel W. Stockton, assignee of Samuel K. Jennings. | Baltimore, Md..... | Jan. 20, 1843. |
| Supporters, abdominal..... | Joseph White, Seymour N. Marsh, and Henry Smith..... | Canajoharie, N. Y..... | Sept. 28, 1843. |
| Supporters, uterine | Alexander H. McNair | Philadelphia, Penn | July 28, 1843. |
| Teeth, setting artificial | Jonathan Dodge | New York, N. Y..... | Mar. 4, 1843. |
| Trusses | Edmund P. Banning | Pittsburg, Penn..... | April 6, 1843. |
| Trusses | John V. Wilson..... | New Haven, Conn..... | May 26, 1843. |

CLASS XXI.—WEARING APPAREL, articles for the toilet, &c., including instruments for manufacturing.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|----------------------------|------------------------|--------------------------|---|
| Buckles, suspender | James Bingham..... | Philadelphia, Penn | Feb. 4, 1843. |
| Buttons, paper | Elihu M. Pomeroy | Wallingford, Conn | Sept. 23, 1843; reissued Nov. 24, 1843. |

XXI.—*Expired patents for inventions.*

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|---|--|----------------------------|-----------------|
| Garments, cutting..... | David N. Sipperly | Troy, N. Y. | July 8, 1843. |
| Garments, measuring and cutting..... | David L. Fendell | Gilboa, N. Y. | June 14, 1843. |
| Hone or strap, razor | Wm. D. Boardman..... | Russellsaville, N. Y. | Jan. 20, 1843. |
| Hooks and eyes for fastening garments | Charles Atwood..... | Derby, Conn. | Feb. 24, 1843. |
| Tailors' measures | Cyrus Morey and David Hummer | McArthurstown, Ohio..... | July 8, 1843. |
| Tailors' measures | George Eckles and Sheldon X. Ball..... | Flint Creek, N. Y. | Sept. 28, 1843. |
| Tailors' measures | Thomas Oliver | New York, N. Y. | Mar. 30, 1843. |
| Umbrellas | Waring Letting..... | New York, N. Y. | Nov. 31, 1843. |

CLASS XXII.—MISCELLANEOUS.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|---|-----------------------|-----------------|
| Baskets for catching eels..... | John Downs..... | Belleport, N. Y. | April 25, 1843. |
| Boxes, &c., marking..... | Ezekiel Wilson, assignee of Jonathan C. Walker..... | Concord, N. H. | Aug. 26, 1843. |
| Boxes and other bodies, removing square and other prismatic..... | Stephen D. Williamson..... | Anderson, Ohio..... | Feb. 4, 1843. |
| Box trap for catching animals | Jacob Sloop and John Esteale..... | Allegheny, Pa. | Nov. 6, 1843. |
| Cane-covers | John P. Bryan..... | Princeton, Ky. | June 24, 1843. |
| Chickens, hatching, by artificial heat..... | Napoleon E. Guerin..... | New York, N. Y. | Mar. 30, 1843. |
| Coffins to be used in cases of doubtful death..... | Christian H. Eisenbraudt..... | Baltimore, Md. | Nov. 15, 1843. |
| Fire ladders..... | Morton B. Hill..... | Fairfield, Ohio..... | Sept. 1, 1843. |
| Ice, accumulating..... | John Dutton..... | Aston, Pa. | May 8, 1843. |
| Ice, cars and receiving platform for receiving blocks of..... | Nathaniel J. Wyeth..... | Cambridge, Mass..... | Oct. 28, 1843. |
| Ice-cutters and markers..... | Nathaniel J. Wyeth..... | Cambridge, Mass..... | Oct. 25, 1843. |

Nov. 6, 1843.
Mar. 17, 1843.
Feb. 24, 1843.
Oct. 6, 1843.

Cambridge, Mass.....
Haddam, Mass.....
Derby, Conn.....
New Bedford, Mass.....

Nathaniel J. Wyeth.....
Harris Cook.....
John J. Howe.....
Geo. W. Sowle and William Carley.....

Ice, machinery for elevating blocks of, &c.....
Net, gill, for catching fish.....
Press, machine for stitching, in rows, in sheets of
paper.....
Whale blubber, mincing, machines for.....

ALPHABETICAL LIST OF PATENTS FOR DESIGNS THAT HAVE EXPIRED DURING THE YEAR 1857.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|--|---|-------------------------|-----------------|
| Bas-relief of Henry Clay..... | C. Y. Haynes..... | Philadelphia, Pa..... | Nov. 12, 1850. |
| Blower stand..... | Walter Bryant..... | Boston, Mass..... | Sept. 24, 1850. |
| Bracket, cast iron..... | John C. King..... | Boston, Mass..... | Aug. 13, 1850. |
| Bust of Daniel Webster..... | John S. Royce..... | Cuylerville, N. Y..... | Sept. 17, 1850. |
| Carriage plates..... | E. S. Archer & R. F. Warner..... | Philadelphia, Pa..... | Nov. 19, 1850. |
| Chandeliers..... | James Hutchinson, assignor to..... | Troy, N. Y..... | Mar. 19, 1850. |
| Floor-cloth, painted..... | D. A. E. & N. B. Powers..... | Landenburg, N. Y..... | May 14, 1850. |
| Furnace, portable..... | C. W. Warnick, F. Leibbrandt, J. G. Abbott, and A. Lawrence..... | Philadelphia, Pa..... | Mar. 28, 1850. |
| Grate frame and fender..... | James L. Jackson..... | New York, N. Y..... | Oct. 15, 1850. |
| Grate, portable..... | Amos Paul..... | New Market, N. H..... | July 22, 1850. |
| Lamps..... | E. S. Archer & R. F. Warner..... | Philadelphia, Pa..... | July 9, 1850. |
| Railings, iron..... | William Ballard..... | New York, N. Y..... | Oct. 29, 1850. |
| Register and ventilator, plates for..... | Chas. T. Tuttle & James S. Bailey..... | Williamsburg, N. Y..... | Sept. 24, 1850. |
| Register and ventilator, plates for..... | Chas. T. Tuttle & James S. Bailey..... | Williamsburg, N. Y..... | Sept. 24, 1850. |
| Register and ventilator, plates for..... | Chas. T. Tuttle & James S. Bailey..... | Williamsburg, N. Y..... | Sept. 24, 1850. |
| Register and ventilator, plates for..... | Chas. T. Tuttle & James S. Bailey..... | Williamsburg, N. Y..... | Sept. 24, 1850. |
| Register and ventilator, plates for..... | Chas. T. Tuttle & James S. Bailey..... | Williamsburg, N. Y..... | Sept. 24, 1850. |
| Spoon-handles..... | Charles F. and George B. Gordon..... | Boston, Mass..... | Nov. 19, 1850. |
| Stoves..... | Henry L. Shepard..... | Dayton, Ohio..... | Jan. 8, 1850. |
| Stoves..... | Peter J. Simmons..... | Troy, N. Y..... | Feb. 5, 1850. |

Expired patents for designs.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|----------------------------|---|----------------------------|-----------------|
| Stoves | Joseph G. Lamb and Conrad Harris, assignors to Wm. C. Davis. | Cincinnati, Ohio | Feb. 5, 1850. |
| Stoves | Wm. P. Cresson, David Stuart, and Peter Seibert, assignors to Wm. P. Cresson. | Philadelphia, Pa. | Feb. 5, 1850. |
| Stoves | Wm. P. Cresson, David Stuart, and Peter Seibert, assignors to Wm. P. Cresson. | Philadelphia, Pa. | Feb. 5, 1850. |
| Stoves | James H. Conklin, assignor to | Peekskill, N. Y. | Feb. 19, 1850. |
| Stoves | S. B. Sexton & Co. | Baltimore, Md. | Feb. 19, 1850. |
| Stoves | Jeremiah D. Green and George Warren | Troy, N. Y. | Feb. 26, 1850. |
| Stoves | Wm. L. Sanderson, assignor to Clute & Brothers. | Schenectady, N. Y. | Feb. 26, 1850. |
| Stoves | W. P. Cresson, David Stuart, and P. Seibert, assignors to W. P. Cresson. | Philadelphia, Pa. | Mar. 12, 1850. |
| Stoves | W. P. Cresson, David Stuart, and P. Seibert, assignors to W. P. Cresson. | Philadelphia, Pa. | Mar. 12, 1850. |
| Stoves | James H. Conklin | New York, N. Y. | Mar. 12, 1850. |
| Stoves | Samuel A. House | Mechanicsville, N. Y. | Mar. 26, 1850. |
| Stoves | James Wager | Troy, N. Y. | April 2, 1850. |
| Stoves | Joshua Crandall, assignor to A. Cox & Co. | Troy, N. Y. | April 9, 1850. |
| Stoves | David L. Bartlett | Baltimore, Md. | April 9, 1850. |
| Stoves | P. A. Palmer | Le Roy, N. Y. | April 30, 1850. |
| Stoves | Wahburn Eaco. | Seneca Falls, N. Y. | May 14, 1850. |
| Stoves | D. Root | Cincinnati, Ohio | May 21, 1850. |
| Stoves | Asa C. Brownell | Providence, R. I. | May 28, 1850. |
| Stoves | Joel C. Bailey and Russell Wheeler | Utica, N. Y. | May 28, 1850. |
| Stoves | Amos Paul | New Market, N. H. | June 11, 1850. |
| Stoves | Elijah F. Peniman | Rochester, N. Y. | June 18, 1850. |
| Stoves | John F. Rathbone | Albany, N. Y. | June 18, 1850. |
| Stoves | John F. Rathbone | Albany, N. Y. | June 18, 1850. |
| Stoves | James Wager, David Pratt, and Volney Richmond. | Troy, N. Y. | June 18, 1850. |
| Stoves | J. E. Owens, J. Ebert, and E. G. Dyer | Hamilton, Ohio | June 25, 1850. |

| | | | |
|--------------|---|--------------------------|-----------------|
| Stoves | Washburn Race | Seneca Falls, N. Y. | June 26, 1860. |
| Stoves | Joshua Crandall, assignor to E. Johnson and D. B. Cox. | Troy, N. Y. | July 2, 1860. |
| Stoves | Calvin Doane | Brantree, Mass. | July 9, 1860. |
| Stoves | S. S. Jewett and F. H. Root | Buffalo, N. Y. | July 9, 1860. |
| Stoves | Apollis Richmond, assignor to A. C. Bar- stow & Co. | Providence, R. I. | July 16, 1860. |
| Stoves | James H. Conklin and A. W. Jones, assign- ors to James Macgregor, Jr. | Wilton, N. Y. | July 22, 1860. |
| Stoves | Job E. Owens, Jacob Ebert, and E. G. Dyer. | Hamilton, Ohio | July 23, 1860. |
| Stoves | Reuben J. Blanchard, assignor to Billings P. Learned and George H. Thatcher. | Albany, N. Y. | Aug. 13, 1860. |
| Stoves | Sherman S. Jewett and F. H. Root | Buffalo, N. Y. | Aug. 13, 1860. |
| Stoves | Robert Donovan | Pittsburg, Penn. | Aug. 20, 1860. |
| Stoves | Charles W. Warnick | Philadelphia, Pa. | Aug. 27, 1860. |
| Stoves | William L. Sanderson, assignor to S. Cole and G. C. Mather. | Troy, N. Y. | Aug. 27, 1860. |
| Stoves | Joseph G. Lamb | Cincinnati, Ohio | Sept. 24, 1860. |
| Stoves | Joseph G. Lamb | Cincinnati, Ohio | Sept. 24, 1860. |
| Stoves | William Savery | New York, N. Y. | Sept. 24, 1860. |
| Stoves | Reuben J. Blanchard, assignor to B. P. Learned and George H. Thatcher. | Albany, N. Y. | Sept. 24, 1860. |
| Stoves | Anthony W. Jones, assignor to Edward R. Brown. | Albany, N. Y. | Oct. 1, 1860. |
| Stoves | Erza Ripley, assignor to George W. Eddy. | Waterford, N. Y. | Oct. 22, 1860. |
| Stoves | Erza Ripley, assignor to George W. Eddy. | Waterford, N. Y. | Oct. 22, 1860. |
| Stoves | Luben Eddy | Taunton, Mass. | Oct. 29, 1860. |
| Stoves | Reuben J. Blanchard, assignor to B. P. Learned and George H. Thatcher. | Troy, N. Y. | Nov. 12, 1860. |
| Stoves | Apollis Richmond, assignor to A. C. Bar- stow & Co. | Providence, R. I. | Nov. 12, 1860. |
| Stoves | D. Root | Cincinnati, Ohio | Nov. 12, 1860. |
| Stoves | William B. Gleason, assignor to | Boston, Mass. | Nov. 26, 1860. |
| Stoves | James Harbarn and Winslow Ames | Nashua, N. H. | Nov. 26, 1860. |
| Stoves | Samuel Pierce, assignor to Johnson, Cox & Fuller. | Troy, N. Y. | Dec. 3, 1860. |
| Stoves | Morris Smith and Benona S. Gleason | Le Roy, N. Y. | Dec. 3, 1860. |
| Stoves | Charles A. Lambard | Augusta, Me. | Dec. 10, 1860. |

Expired patents for designs.

| Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|----------------------------|---|--------------------------|--------------------------|
| Stoves | S. W. Gibbs, assignor to | Albany, N. Y. | Jan. 21, 1851; antedated |
| Stoves, coal | North, Harrison, & Co. | Philadelphia, Penn. | December 31, 1850. |
| Stoves, coal | John T. Davy | Troy, N. Y. | June 4, 1850. |
| Stoves, cooking | John F. Rathbone | Albany, N. Y. | Aug. 13, 1850. |
| Stoves, cooking | Jersuiah D. Green and George Warren | Troy, N. Y. | April 16, 1850. |
| Stoves, cooking | William L. Sanderson | Troy, N. Y. | June 25, 1850. |
| Stove, parlor | George W. Ring, assignor to Johnson, Cox, & Fuller | Troy, N. Y. | Aug. 27, 1850. |
| Umbrella-stands | Walter Bryant | Boston, Mass. | June 4, 1850. |

ALPHABETICAL LIST OF PERSONS TO WHOM PATENTS FOR INVENTIONS OR DISCOVERIES, AND FOR DESIGNS, HAVE BEEN GRANTED DURING THE YEAR 1857.

COMMISSIONER OF PATENTS

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| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|--------|
| 17356 | Abbé, Alanson..... Abbott & Lawrence. (See Smith, Brown & Sallor, assignors) Abbott & Lawrence. (See Smith, Brown & Sallor, assignors.) Abel & Winne. (See S. W. Gibbs, assignor.) Accelerating Fire-arms Company. (See Lyman, Azol, assignor.) | Corset, spinal | May 26, 1857..... | XX. |
| 16779 | Achley, John T..... | Engines, steam stop-motions for..... | Mar. 10, 1857..... | VL. |
| 16676 | Adams, Calvin..... Adams, Charles H., & al. (See Fairbank, S. D., assignor) | Locks, door, right and left hand, keeper for..... | Feb. 24, 1857..... | IL. |
| 17658 | Adams, Henry W..... Adams, Samuel, and George R. Clark. (See Clark & Adams.) | Lamps, fountain..... | June 30, 1857..... | V. |
| 18125 | Adams, Sanford..... | Coal-sifters..... | Sept. 8, 1857..... | V. |
| 17187 | Adams, William N..... | Screw-cutting machines..... | May 5, 1857..... | IL. |
| 18373 | Addison, Edward B..... | Locomotives, exhaust regulator for..... | Oct. 13, 1857..... | VL. |
| 18176 | Ager, Wilson..... | Rice, hulling, machines for..... | Sept. 15, 1857..... | XIII. |
| 18177 | Ager, Wilson..... | Rice, cleaning, machines for..... | Sept. 15, 1857..... | XIII. |
| 18374 | Ager, Wilson..... | Rice, cleaning, machines for..... | Oct. 13, 1857..... | XIII. |
| 17255 | Aiken, Walter..... | Knitting-machines..... | Dec. 1, 1857..... | III. |
| 17547 | Akins, Henry S..... | Ploughs, reversible mould boards for..... | June 16, 1857..... | I. |
| 18665 | Akins, William H., and Joseph C. Burritt, assignors to Wait T. Huntington and Hervey Platts, | Clock, calendar..... | Nov. 17, 1857..... | VIII. |
| 18127 | Alden, D. R..... | Planters, corn..... | Sept. 8, 1857..... | I. |
| 17350 | Alden, G. W..... | Car-wheels, railroad, wrought iron plate..... | May 12, 1857..... | X. |
| 18175 | Alden, Timothy..... | Type setting and distributing machine..... | Sept. 15, 1857..... | XVIII. |
| 18126 | Aldrich, Cyrus C..... | Planters, seed..... | Sept. 8, 1857..... | I. |
| 18491 | Aldridge, Thomas and John..... | Furnaces..... | Oct. 27, 1857..... | V. |
| 16518 | Alexander, Eliza..... | Sewing-machines..... | Feb. 3, 1857..... | III. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------|----------|
| 17861 | Alexander, Thomas J. (No. 1) | Saws, circular, method of driving. | July 28, 1857 | XIV. |
| 17860 | Alexander, Thomas J. (No. 2) | Sawing-machines, feeding arrangement for | July 28, 1857 | XIV. |
| 17859 | Alger, Charles C. | Furnace, smelting | June 30, 1857 | II. |
| 16458 | Allard, D. N. (See Ormiston, John, assignor.) | | | |
| | Allcroft, John, and Thomas Mighten. | Gauges, steam and pressure | Jan. 27, 1857 | VI. |
| | Allen & Ivens. (See Ivens, Edmund M., assignor.) | | | |
| 17912 | Allen, Andrew | Looms, power. | Aug. 4, 1857 | III. |
| 16428 | Allen, E. G., assignor to Henry O. Allen. | Gauges, steam-pressure | Jan. 20, 1857 | VI. |
| 18528 | Allen, E. G., assignor to Henry O. Allen. | Gauges, steam-pressure | Oct. 27, 1857 | VI. |
| 16387 | Allen, Ethan | Fire-arms | Jan. 13, 1857 | XIX. |
| 17862 | Allen, Ethan | Wind-mills, &c., governor for regulating the work of. | July 28, 1857 | XI. |
| 18836 | Allen, Ethan | Fire-arms, revolving | Dec. 15, 1857 | XIX. |
| 18492 | Allen, H. R. | Seeding-machines | Oct. 27, 1857 | I. |
| 18128 | Allen, Horace R. | Planters, corn | Sept. 8, 1857 | I. |
| 18837 | Allen, Horatio | Valve-gear of steam-engines, cut-off | Dec. 15, 1857 | VI. |
| 442 | Allen, John | Teeth, mineral, setting | Mar. 24, 1857 | Reissue. |
| 16781 | Allen, John F. | Engines, steam, cut-offs of | Mar. 10, 1857 | VI. |
| 16957 | Allen, Samuel S. | Harvesters | April 7, 1857 | VI. |
| 18006 | Allen, Z. | Mills, &c., tubular shafting for | Aug. 18, 1857 | I. |
| 16707 | Allender, John | Ships' blocks, for sustaining friction rollers in | Mar. 3, 1857 | XIII. |
| 17477 | Allerton, R. G. | Blotter | June 9, 1857 | VIII. |
| 18666 | Allison, John | Cane, sugar, machines for covering | Nov. 24, 1857 | I. |
| 16634 | Altman, Jonathan | Gun-lock, hair-triggered, self-setting | Feb. 17, 1857 | XIX. |
| | American Hoop Machine Company. (See Sawyer, Sylvester, assignor.) | | | |
| | American Hoop Machine Company. (See Sawyer, Sylvester, assignor.) | | | |
| | American Iron Railway Company. (See Carpenter, Hiram, assignor.) | | | |
| | American Pin Company. (See Fowler, Thaddeus, assignor.) | | | |

| 18493 | Ames, Nathan, assignor to himself and Edmund Brown. | Graters. | Oct. | 13, 1857 | XVII. |
|-------|--|---|-------|----------|------------|
| 17357 | Amiden, Amory. | Mowing and reaping machines. | May | 26, 1857 | I. |
| 18531 | Anderson, A. G. | Kilns, lime. | Nov. | 3, 1857 | XV. |
| 19079 | Anderson, Alexander. | Potato-diggers. | Dec. | 29, 1857 | I. |
| 16520 | Anderson, Edward H. | Cars, railroad, safety coupling for. | Feb. | 3, 1857 | X. |
| 16519 | Anderson, Jonathan R. | Excavating and dredging machine. | Feb. | 3, 1857 | IX. |
| 16635 | Anderson, S. J., and N. Richardson. | Chairs, extension. | Feb. | 17, 1857 | XVII. |
| 17963 | Andrews, A. F. | Fuse-making machine. | July | 28, 1857 | XIX. |
| 16782 | Andrews, Emanuel. | Saws, machine for grinding. | Mar. | 10, 1857 | XIV. |
| 17774 | Andrews, Emanuel. | Saws, gauging and filing, machine for. | July | 14, 1857 | XIV. |
| 17851 | Andrews, Joel W. | Bricks, burning. | Mar. | 9, 1857 | Extension. |
| 15666 | Andrews, R. Snowden. | Gas, heating and cooking by, apparatus for. | May | 12, 1857 | V. |
| 16901 | Andrus, C. H., assignor to Squire Lee. | Sewing-machines. | Nov. | 3, 1857 | III. |
| 16901 | Andrus, Elliot. | Ploughs. | Mar. | 31, 1857 | I. |
| 18688 | Apperly, James, and William Cilensold. | Fibrous substances for spinning, machinery for preparing. | Dec. | 22, 1857 | III. |
| 17773 | Archer, Robert. | Chairs, railroad, machine for making. | July | 14, 1857 | X. |
| 16573 | Armstrong, Joseph. | Leather, stuffing. | Feb. | 10, 1857 | XVI. |
| 18176 | Arnold, Aaron. | Mill, grinding. | Sept. | 15, 1857 | XIII. |
| 18316 | Arnold, Alonzo C. | Hat-bodies, forming and hardening, machine for. | Oct. | 6, 1857 | III. |
| 440 | Arnold, Charlotte, administratrix, and Peter U. Morgan, administrator, of John Arnold, deceased, and George G. Bishop, assignors to the Union Manufacturing Company. | Cloth, web for, machine for forming the, of wool, hair, or other suitable substance, without spinning or weaving. | Mar. | 17, 1857 | Reissue. |
| 16867 | Arnold, James P. | Cordage machines. | Mar. | 24, 1857 | III. |
| 17310 | Arnold, James P. | Cordage machines. | May | 19, 1857 | III. |
| 16636 | Arnold, Leonard. | Planters, seed. | Feb. | 17, 1857 | I. |
| 17311 | Arthur, Robert. | Portfolios. | May | 19, 1857 | XVIII. |
| 18129 | Ashcroft, E. H. | Gauges, steam-pressure tubes for. | Sept. | 8, 1857 | VI. |
| | Ashcroft, R., and A. C. Martin. (See Martin & Wanbaugh.) | | | | |
| | Ashmead, Rogers Sperry, and Hurlbut. (See Leroy S. White, assignor.) | | | | |
| | Athearu, Eugenia, Barker, and Halvorson. (See Halvorson Halvor.) | | | | |
| 16667 | Atherton, Nathan. | Valves, slide, for steam-engines. | Nov. | 24, 1857 | VI. |
| 17548 | Atkeson, Charles W. | Evaporators, brine. | June | 16, 1857 | IV. |
| 17368 | Atkinson, Charles, and G. S. Manning. | Vehicles, construction of. | May | 26, 1857 | X. |

Patentees of inventions and designs, 1857.

| No. | Names of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|---------------------|-------------------------|
| 17412 | Atterbury, Thomas B. Atwater and Bristol Manufacturing Company. (See Gee, William V., assignor.) | Lock, door..... | June 2, 1857..... | II. |
| 17176 | Atwater, Bryant..... | Sewing-machines..... | May 5, 1857..... | III. |
| 468 | Atwood, Anson..... | Car-wheels, cast iron..... | June 9, 1857..... | Reissue. |
| 497 | Atwood, Anson (B). | Car-wheels, cast iron..... | Sept. 22, 1857..... | Reissue; di- vision. |
| 498 | Atwood, Anson (C). | Car-wheels, cast iron..... | Sept. 22, 1857..... | Reissue; di- vision. |
| 17068 | Aubin, N..... | Gas-retorts, closing..... | April 21, 1857..... | IV. |
| 17614 | Aubin, N..... | Gas-generators..... | June 23, 1857..... | IV. |
| 18076 | Augsburger, John..... | Corn stubble, &c., machines for cutting on ground, preparatory to ploughing. | Sept. 1, 1857..... | I. |
| 18369 | Austin, L. B., and J. R. Pierce. (See Pierce & Austin.) | Threshing cylinders, method of balancing..... | Oct. 6, 1857..... | I. |
| 17684 | Averill, D. R., assignor to himself, Jas. F. Davis, and Henry Twitchell. | Bridges, &c., segmented truss for..... | July 28, 1857..... | IX. |
| 17089 | Avery, George S..... | Steam traps for relieving steam pipes of water..... | April 21, 1857..... | VI. |
| 17252 | Avery, John, jr..... | Balance, self-indicating..... | May 12, 1857..... | XII. |
| 17665 | Avery, Otis and Z. W..... | Pill-machines..... | July 28, 1857..... | IV. |
| 16868 | Ayer, James C..... | Casting railway car-wheels..... | Mar. 24, 1857..... | II. |
| | Aylsworth, Norman..... | | | |
| | Ayres, Samuel P. (See Bramwell, William, as- signor.) | | | |
| 18031 | Ayres, Wm. W..... | Filter..... | Aug. 25, 1857..... | XI. |
| 16922 | Babbitt, B. T..... | Enema-giving apparatus..... | Mar. 17, 1857..... | XX. |
| 18838 | Babbs, Juan S. L., and Amos H. Ray..... | Dovetails, adjustable gauge for..... | Dec. 15, 1857..... | XIV. |
| 16635 | Babcock, Darius, assignor to himself and Thomas Harrop. | Vehicles, springs for, arrangement of..... | Feb. 10, 1857..... | X. |
| 18269 | Bachelder, James H..... | Sawing-machines, circular, method of holding and setting the log in. | Sept. 29, 1857..... | XIV. |
| 17956 | Bacheller, William..... | Mowing-machines..... | Aug. 11, 1857..... | I. |

| 17780 | Bachman, George W..... | Husking corn, machines for..... | July 7, 1857..... | I. |
|-------|--|--|---------------------|------------|
| | Bacon, S. T. (See Smith, Edward N., assignor.) | | | |
| | Badger, L. W. and D. W. Gitchell, assignors to the Seamless Garment Manufacturing Company. (See Gitchell & Badger, assignors.) | | | |
| 16368 | Badger, William..... | Planters, cotton seed..... | Jan. 13, 1857..... | I. |
| 17133 | Badger, Charles..... | Whips, raw-hide, method of manufacturing..... | April 28, 1857..... | XVI. |
| 17714 | Baier, Ludwig, assignor to Joseph Lippincott and William C. Barr..... | Locks..... | June 30, 1857..... | II. |
| 18493 | Bailey, Amon..... | Feather-dressing machine..... | Oct. 27, 1857..... | XVII. |
| 18375 | Bailey, Charles P..... | Car-seats, railroad..... | Oct. 13, 1857..... | X. |
| 17649 | Bailey, Franklin L..... | Printing-press, card..... | June 16, 1857..... | XVIII. |
| 17616 | Bailey, Franklin L..... | Printing-press..... | June 23, 1857..... | XVIII. |
| 17070 | Bailey, Gilbert L..... | Door-spring..... | April 21, 1857..... | II. |
| 16712 | Bailey, Leonard..... | Stamp, hand..... | Mar. 8, 1857..... | XVIII. |
| 17253 | Bailey, R. P..... | Signal-lamps..... | May 12, 1857..... | VIII. |
| | Bailey, Stephen A., and R. Wheeler. (See Wheeler and Bailey.) | | | |
| 18077 | Baillan, Philippe..... | Vehicles, two-wheeled, thills for..... | Sept. 1, 1857..... | X. |
| 18623 | Baird, James B..... | Bells, apparatus for ringing..... | Nov. 17, 1857..... | XXII. |
| 18117 | Baker, George W., assignor to himself and Abijah French..... | Cap-carriers, percussion..... | Sept. 1, 1857..... | XIX. |
| 18007 | Baker, H. H..... | Planing-cutters, rotary..... | Aug. 18, 1857..... | XIV. |
| 16670 | Baker, J. G., Jr., assignor to J. G. Baker, Jr., and Charles Bradford..... | Boot-crimping machines..... | Feb. 17, 1857..... | XVI. |
| 16906 | Baker, J. B..... | Cultivators, corn..... | Mar. 31, 1857..... | I. |
| 18376 | Baker, Nathaniel E..... | Sash-supporters..... | Oct. 13, 1857..... | IX. |
| 17866 | Baker, Samuel N..... | Lathe, automatic, for turning irregular forms..... | Oct. 13, 1857..... | XIV. |
| 17957 | Baker, William..... | Lubricator, automatic, for railroad car-wheels..... | Aug. 11, 1857..... | XII. |
| | Bald & Cousland. (See Seropyan, Christopher D., assignor.) | | | |
| 16859 | Baldwin, Smith..... | Boilers, steam..... | April 7, 1857..... | VI. |
| 18788 | Ball, E., assignor to himself and John Butter..... | Mowing-machines..... | Dec. 1, 1857..... | I. |
| 18624 | Ball, Jesse..... | Sraw-cutters..... | Nov. 17, 1857..... | I. |
| 17496 | Ball, Jonathan..... | Water-pipes, coating..... | Sept. 15, 1857..... | Reissue. |
| | Ball, Jonathan..... | Pipes, water, coating..... | Dec. 1, 1857..... | Extension. |
| 884 | Ball, Thomas..... | Bust of Napoleon Bonaparte..... | June 9, 1857..... | Design. |
| 18569 | Ball, Thomas C..... | Window-blind slats, round tenons or, device for forming..... | Nov. 10, 1857..... | IX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|----------|
| 918 | Ball, William..... | Medallions of Franklin to mark pens and pen-holders. | July 21, 1857..... | Design. |
| 16960 | Ballou, Ransom, jr., and Benjamin F. Hooper. Ballou, Ransom, jr. (See Hooper, Benjamin F., assignor.) | Curtain fixtures, window..... | April 7, 1857..... | XVII. |
| 18229 | Baltzby, John W., and Wm. Hobson..... | Harvesters, grain and grass, cutting apparatus for.. | Sept. 22, 1857..... | I. |
| 463 | Bancroft, Edward, deceased, J. Bancroft, execu- tor of. | Mills, hanging shafts in..... | May 12, 1857..... | Reissue. |
| 18728 | Banks, Joseph..... | Ploughs..... | Dec. 1, 1857..... | I. |
| 17776 | Banta, <i>et al.</i> (See Foster & Banta, assignors.) | Pen and pencil case..... | July 14, 1857..... | XVIII. |
| 18718 | Baptin, Edward..... | Pumping-engines, steam..... | Nov. 24, 1857..... | XL. |
| 16819 | Barker, John S., assignor to himself and Aaron W. Rockwood. | Pumps, rotary..... | Mar. 24, 1857..... | XI. |
| 16861 | Barker, Abel..... | Process for treating moss for mattresses..... | April 7, 1857..... | IV. |
| 17015 | Barker, Halvorson, Athearu & Eastin. (See Hal- vorson, Halvor, assignor.) | Hemp brakes..... | April 7, 1857..... | III. |
| 16961 | Barker, Samuel..... | | | |
| 17015 | Barkley, James..... | | | |
| | Barnes, Augustus, and O. W. Skov. (See Skov & Barnes.) | | | |
| | Barnes, C., and F. C. La Croix. (See La Croix & Barnes.) | | | |
| | Barnes, E. E., and James B. Blakeloe. (See Blakeloe & Barnes.) | | | |
| 17924 | Barr & Lippincott. (See Baier, Ludwig, assignor.) | Printing-presses, inking rollers for..... | July 21, 1857..... | XVIII. |
| 18947 | Barrett, E. E..... | Stamps, hand..... | Dec. 29, 1857..... | XVIII. |
| 17134 | Barrett, E. E..... | Harvesting-machines..... | April 28, 1857..... | I. |
| 17135 | Barrett, J. F..... | Grain, binding, apparatus for..... | April 28, 1857..... | I. |
| 18046 | Barrett, William..... | Straw-cutters..... | Dec. 29, 1857..... | I. |

| | | | | | |
|-------|---|---|----------------|---------|------------|
| 923 | Barry, Thomas | Stoves, Veauvian | Aug. 26, 1857 | Design. | III. |
| 924 | Barry, Thomas | Stoves, superior | Aug. 26, 1857 | Design. | XIV. |
| 925 | Barry, Thomas | Stoves, Polar | Aug. 26, 1857 | Design. | |
| 926 | Barry, Thomas | Stoves, farm | Aug. 26, 1857 | Design. | |
| 927 | Barry, Thomas | Stoves, home | Aug. 26, 1857 | Design. | |
| 928 | Barry, Thomas | Stoves, centurion | Aug. 26, 1857 | Design. | |
| 929 | Barry, Thomas | Stoves, column | Sept. 1, 1857 | Design. | |
| 972 | Barstow, A. C. | Stoves, wood | Feb. 17, 1857 | Design. | |
| 981 | Barstow, A. C. | Stoves, for the plates of | April 14, 1857 | Design. | |
| 988 | Barstow, A. C. | Stoves, laundry | Dec. 15, 1857 | Design. | |
| 17895 | Bartholf, Abraham | Sewing-machines, feeding motion for | July 31, 1857 | Design. | |
| 18946 | Bartholomew, D. B. | Sawing-machines, gearing for feed-rollers in | Dec. 29, 1857 | Design. | |
| | Bartlett & Snell. (See Snell, D. W., and Stephen S. Bartlett.) | | | | |
| | Bartlett, S. S., and Daniel W. Snell. (See Snell & Bartlett.) | | | | |
| | Bartlett, Stephen S., and Daniel W. Snell. (See Snell & Bartlett.) | | | | |
| | Bartlett, William H. C., and William Kemble. (See Kemble & Bartlett.) | | | | |
| 18669 | Bartol, Barnabas H. | Screwing tubes in vacuum pans | Nov. 24, 1857 | Nov. | II. |
| 18670 | Barton, G. L., and A. E. Roberts | Forks, hay and manure | Nov. 24, 1857 | Nov. | I. |
| | Basford, Thomas W., and G. Sprengel. (See Sprengel & Basford.) | | | | |
| 17660 | Bassett, Joel R. | Boles and rivets, machine for making | June 30, 1857 | June | II. |
| 18688 | Batchelder, John M., and Luther L. Smith | Printing, engraved metal plates for, preparation of | Nov. 24, 1857 | Nov. | XVIII. |
| 18230 | Batchelder, W. W. | Gas-burners | Sept. 29, 1857 | Sept. | V. |
| 18171 | Batcheller, L. B., assignor to West, Canfield, & Co. | Washboards, wooden, method of manufacturing | Sept. 8, 1857 | Sept. | XIV. |
| 16577 | Batchelor, J. M. | Sleighs, attaching thills to, mode of | Feb. 10, 1857 | Feb. | X. |
| 18271 | Bate, John J. | Lard-rendering kettles | Sept. 29, 1857 | Sept. | IV. |
| 18270 | Bate, John J., and Francis S. Low | Composition for covering meats | Sept. 29, 1857 | Sept. | IV. |
| 18272 | Bates, Henry | Gauges, steam-pressure | Sept. 29, 1857 | Sept. | VI. |
| 18568 | Bates, Henry | Projectiles | Nov. 10, 1857 | Nov. | XIX. |
| 16958 | Bates, Horatio | Spikes, clinching, mode of | April 7, 1857 | April | II. |
| 17188 | Bates, N. R. | Stuffing-boxes | May 5, 1857 | May | XI. |
| 17413 | Bates, William A. | Sleeve-fasteners | June 2, 1857 | June | XXI. |
| 17778 | Battelle, William | Nail-plate holder | July 14, 1857 | July | II. |
| | Battin, Joseph | Coal, breaking, machine for | Sept. 24, 1857 | Sept. | Extension. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|----------------|---------|
| 17616 | Batty, Thomas. | Sails, top, means for reducing | June 23, 1857 | VII. |
| 18179 | Bauman, N. | Bolt, flour | Sept. 15, 1857 | XIII. |
| 18032 | Beach, M. S. | Printing-presses, machine for wetting and cutting paper for. | Aug. 25, 1857 | XVIII. |
| 18377 | Beach, M. S. | Chair for pews, folding | Oct. 13, 1857 | XVII. |
| 17360 | Beach, Sylvester W. | Carriage-hubs | May 26, 1857 | X. |
| 18373 | Beach, Waldron. | Oysters, opening apparatus for. | Sept. 29, 1857 | XXII. |
| 17359 | Beals, Fondyoe | Fire-arms, revolving | May 26, 1857 | XIX. |
| 16578 | Bean, John. | Separators, grain mill, &c., extension hoppers for. | Feb. 10, 1857 | I. |
| 16521 | Beardale, A. M. | Saws, filing | Feb. 3, 1857 | II. |
| 18378 | Beardale, A. M. | Saw-filer | Oct. 13, 1857 | XIV. |
| 16349 | Beardale, Amenzo W., and W. Robinson. (See Robinson, William.) | Stoves, cooking, ships' | Jan. 6, 1857 | V. |
| 18728 | Becker, Christopher | Surveying-level | Dec. 1, 1857 | VIII. |
| 16962 | Beckers, Alexander | Stereoscopic pictures, apparatus for exhibiting. | April 7, 1857 | XVIII. |
| 18625 | Beckley, J., and W. H. Carver. (See Carver & Beckley.) | Husking corn, device for. | Nov. 17, 1857 | I. |
| 17478 | Beebe, Lyman, and George F. Smith | Railroad bars, machine for repairing | June 9, 1857 | IX. |
| 18671 | Beecher, Lewis W. | Churn | Nov. 24, 1857 | I. |
| 16522 | Beemer, Levi | Planters, seed | Feb. 3, 1857 | I. |
| 18797 | Beers, Benjamin | Churns | Dec. 8, 1857 | I. |
| 18494 | Beers, Sidney A. | Railways, construction of. | Oct. 27, 1857 | IX. |
| 886 | Beasley, Jacob, and E. J. Delany, assignors to Cresson, Stuart, and Peterson. | Stoves, cooking | May 19, 1857 | Design. |

| | | Stoves..... | June 23, 1857..... | Design. |
|-------|--|--|---------------------|---------|
| 18071 | Behn, Henry, assignor to himself and Thomas Sewell | Sewing-machines | Aug. 25, 1857..... | III. |
| 18080 | Behn, Henry, assignor to himself and Thomas Sewell. | Sewing-machines..... | Dec. 15, 1857..... | III |
| 18317 | Beltzall, Henry..... | Drills, grain..... | Oct. 6, 1857..... | I. |
| 18710 | Belcher, Charles D..... | Sewing-machines | Mar. 3, 1857..... | III. |
| 17286 | Bell, Thomas | Vessels, raising sunken, arrangement of camels for. | July 31, 1857..... | VII. |
| 18319 | Bellville, Julian F., assignor to Robert Murphy. | Steam-generators | Oct. 6, 1857..... | VI. |
| 18729 | Bellinger, Elizabeth..... | Fuel, composition..... | Dec. 1, 1857..... | V. |
| 18318 | Bellows, E. H. | Brick-press | Oct. 6, 1857..... | XV. |
| 17414 | Belson, R. W. | Skates | June 2, 1857..... | XXII. |
| 18727 | Benckert, James M..... | Speed-indicators | Dec. 1, 1857..... | XIII. |
| 909 | Bendix, John E., assignor to S. B. Sexton & Co. | Stove-fronts, grate or..... | July 7, 1857..... | Design. |
| 17479 | Benjamin, George..... | Bit in the brace, holding, devices for | June 9, 1857..... | XIV. |
| 18078 | Bennett, Asa, and S. R. Tenney. (See Tenney & Bennett.) | Cans, sealing..... | Sept. 1, 1857..... | XVII. |
| 17071 | Bennett, Edwin | Yokes, ox | April 21, 1857..... | I. |
| 17661 | Bennett, Isaac K..... | Boilers, riveting, machine for | June 30, 1857..... | VI. |
| 16369 | Bennett, Seneca H..... | Fence, field..... | Jan. 13, 1857..... | IX. |
| 16459 | Bennett, William | Radiators for fire-places, grates, and Franklin stoves | Jan. 27, 1857..... | V. |
| 17361 | Bennett, William | Griddles..... | May 26, 1857..... | XVII. |
| 18129 | Benson, Roberts & Crumblie. (See Roberts & Crumblie, assignors.) | Ovens, bakers' | Oct. 20, 1857..... | V. |
| 18180 | Berdan, Hiram | Dough, kneading | Sept. 15, 1857..... | XVII. |
| 18049 | Berendorf, Joseph F..... | Cans, oil | Dec. 23, 1857..... | XII. |
| 16576 | Bergan, Peter G. (See Davis, Merwin.) | Envelopes, machine for making..... | Feb. 10, 1857..... | XVIII. |
| 17480 | Bergner, Theodore..... | Books, rounding and backing, machine for | June 9, 1857..... | XVIII. |
| 16427 | Berlew, Daniel | Sashes, &c., making, method of..... | Jan. 13, 1857..... | XIV. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|----------|
| 876 | Bernhard, Joseph, assignor to J. Bernhard, J. Hendermeyer, and L. Gausz. | Soda-water apparatus | Mar. 24, 1857..... | Design. |
| 18485 | Bertola, Joseph A., assignor to himself and John Stagg. | Amalgamators..... | Oct. 20, 1857..... | II. |
| 18789 | Bertola, Joseph A., assignor to himself and John Stagg. | Ores of gold and silver, treatment of | Dec. 1, 1857..... | II. |
| 18130 | Betta, C. P. S. | Metal, sheet, machine for cutting figures out of..... | Sept. 8, 1857..... | II. |
| 17254 | Bevard, William. | Shingle-cutter, rotary..... | May 12, 1857..... | XIV. |
| 18379 | Beverly, Charles F. | Wood, bending, machine for..... | Oct. 13, 1857..... | XIV. |
| 17482 | Bicknell, D. C. (See Turbell, F., assignor.) | Pipe, stove, machine for grooving..... | June 9, 1857..... | II. |
| 16370 | Bigelow, Charles. | Looms for weaving pile fabrics double..... | Jan. 13, 1857..... | III. |
| 432 | Bigelow, E. B. | Looms for weaving pile fabrics..... | Feb. 24, 1857..... | Reissue. |
| 461 | Bigelow, E. B. | Looms for weaving Brussels carpets, &c..... | May 5, 1857..... | Reissue. |
| 17189 | Bigelow, E. B. | Looms for weaving pile fabrics..... | May 5, 1857..... | III. |
| 18320 | Bigelow, E. B. (See Bryant, Mertoun C., assignor.) | Looms, power, for weaving wire cloth..... | Oct. 6, 1857..... | III. |
| 436 | Bigelow, Erastus B. | Looms for weaving pile fabrics | March 17, 1857..... | Reissue. |
| 18632 | Bigelow, L. R., A. Robbins, and A. Showman. (See Robbins, Sherman & Bigelow.) | Engine, steam, arrangement of feed water-pipe in the bed of a | Nov. 3, 1857..... | VI. |
| 17663 | Bill, Henry W. | Paper, machines for making | June 30, 1857..... | III. |
| 17416 | Bingham, Edward B. | Hydrant..... | June 2, 1857..... | XI. |
| 16783 | Binny, William W. | Cloth, felt, manufacture of..... | March 10, 1857..... | III. |
| 17072 | Bishop, George G. | Veneers, cutting-knife for..... | April 21, 1857..... | XIV. |
| 17956 | Bishop, Gilbert. | Veneers, machine for cutting..... | May 5, 1857..... | XIV. |
| 17956 | Bishop, Gilbert. | Veneer-machine, rotary | Aug. 11, 1857..... | XIV. |
| 17481 | Bishop, Samuel C. | Insulated wire, machines for covering with lead or other ductile metal..... | June 9, 1857..... | VIII. |

| 18131 | Blahop, Samuel C. | Telegraphic wires, insulated, enclosed in metallic tubing. | Sept. 8, 1857 | VIII. |
|-------|--|--|----------------|---------|
| 17191 | Bishop, Sherlook H. | Carriages, adjustable pole for | May 5, 1857 | X. |
| 16489 | Bishop, William B. | Sewing-machines, guides for | Jan. 20, 1857 | III. |
| 16460 | Bishop, George W. | Stone-grooving machines | Jan. 27, 1857 | XV. |
| 17682 | Bishop, George W. | Pavements, iron, for streets | June 30, 1857 | IX. |
| 17913 | Blasell, Levi. | Locomotives, trucks for | Aug. 4, 1857 | VI. |
| 17777 | Black, George F. | Ploughs, cultivator | July 14, 1857 | I. |
| 18231 | Black, Joseph F. | Grain, binding, machine for | Sept. 22, 1857 | I. |
| | Black, Peter, <i>et al.</i> (See Long, Black, & All-statter) | | | |
| | Blackstone, M. G., and C. P. Garlick. (See Garlick & Blackstone) | | | |
| 18350 | Blair, John C. | Cars, railroad, springs for | Dec. 29, 1857 | X. |
| 18268 | Blake, Henry D., assignor to W. H. Warren | Wrench | Sept. 22, 1857 | II. |
| 16430 | Blake, John S. | Paper-making, machinery for | Jan. 20, 1857 | III. |
| 6963 | Blakelee, C. | Road-scraper | April 7, 1857 | IX. |
| 6823 | Blakelee, James B., and E. R. Barnes | Hat-bodies, felting, machinery for | March 17, 1857 | III. |
| 980 | Blanchard, Abner J. | Stoves, upright | Jan. 6, 1857 | Design. |
| 16433 | Blandy, Alfred A. | Teeth, artificial | Jan. 20, 1857 | XX. |
| 16705 | Blandy, Alfred A. | Teeth, artificial, casting plates for | March 3, 1857 | XX. |
| 16784 | Blandy, Alfred A. | Teeth, artificial, of alloy, casting plates for | March 10, 1857 | XX. |
| 17617 | Blanner, Eugene | Whips, raw-hide, machines for polishing | June 23, 1857 | XVI. |
| 18431 | Blinn, John L. | Wagon-wheels, mode of constructing the tires of | Oct. 20, 1857 | X. |
| 18033 | Bliss, Elihu | Watch-keys, combination of, with finger-rings | Aug. 25, 1857 | XVIII. |
| | Bliss, J. W., and Thomas L. Calkins. (See Calkins, Thomas L., assignor.) | | | |
| 17416 | Bliss, Jeremy W. | Garments, fastening for | June 2, 1857 | XXI. |
| 17136 | Bliss, W. R., and E. Howe, jr. (See Howe & Bliss.) | Fire-arms | April 23, 1857 | XIX. |
| 18079 | Bloodgett, Andrew J. | Rakes | Sept. 1, 1857 | I. |
| 17483 | Blood, Asa | Stove, steam-heating | June 9, 1857 | V. |
| 17959 | Blood, Asa, sr | Dredging-machine | Aug. 11, 1857 | IX. |
| 18118 | Blood, Asa, sr., and R. W. Brown | Stores, &c., in case of fire, mode of removing | Sept. 1, 1857 | IX. |
| 18261 | Blood, Benjamin F. | Furnaces | Dec. 29, 1857 | V. |
| 16461 | Bloodgood, John H. | Felting, bats for, machines for forming | Jan. 20, 1857 | III. |
| 17137 | Bloomer, Charles G. | Lockets, &c., mode of constructing | April 28, 1857 | XVIII. |
| 18080 | Bly, Douglass, <i>et al.</i> (See Nicholas & Bly.) | Wiring blind-rods, machine for | Sept. 1, 1857 | II. |
| | Boardman, Byron | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------------|---------------|
| 16592 | Boardman, Luther | Spoons, polishing | Dec. 10, 1857 | Extension. I. |
| 17192 | Boeklen, Reinhold | Planters, seed | Feb. 10, 1857 | VII. |
| 17044 | Bogle, Robert | Boats for duck-shooting | May 5, 1857 | IX. |
| 16637 | Bolles, Jesse N., assignor to M. W. Bolles | Boring artesian wells, apparatus for | April 14, 1857 | XVIII. |
| 18798 | Bolles, L. M., and W. G. Smith | Photographic camera box | Feb. 17, 1857 | I. |
| 889 | Bonham, J. H. | Planters, corn | Dec. 8, 1857 | Design. IV. |
| 16709 | Bonte, A. P. C. | Picture-frames | May 26, 1857 | III. |
| 17193 | Boorn, Samuel | Compositions for shuttle-drivers | Mar. 3, 1857 | XV. |
| 16905 | Boorn, Samuel | Looms, picker, motion for | May 5, 1857 | III. |
| 18034 | Booth, John | Drying cylinders, steam | Mar. 31, 1857 | III. |
| 18181 | Booth, Joseph | Hat-bodies, manufacturing, machinery for | Aug. 25, 1857 | III. |
| 18430 | Booth, Joseph | Hat-bodies, machine for hardening | Sept. 15, 1857 | V. |
| 18133 | Boothroyd, Joseph | Coal-sifters | Oct. 20, 1857 | X. |
| 18380 | Borda, E., and David Glover | Car-coupling, railroad, reversible | Sept. 8, 1857 | V. |
| 17721 | Borlace, Edward | Coal, separating slate and other foreign substances from, machine for | Oct. 13, 1857 | II. |
| 18035 | Borlman, William | Metal separator | July 7, 1857 | XVII. |
| | Borroughs, J. F., and D. A. Webster. (See Webster and Borroughs.) | Cans, method of hermetically sealing | Aug. 25, 1857 | |
| 17017 | Borrowdale, John, & al. (See Chamberlain, D. H., assignor.) | Boring-machine | April 7, 1857 | XIV. |
| 17255 | Bosenbury, Jonas | Sawing-machines, stitch for | May 12, 1857 | III. |
| 17484 | Bosworth, Charles F. | Apples, paring and quartering, machines for | June 9, 1857 | XVII. |
| 17964 | Bondreaux, L. | Cleaning and carding moss | Aug. 4, 1857 | III. |
| 18172 | Bour, James, assignor to Charles Parlange | Saccharine evaporator | Sept. 8, 1857 | IV. |
| 18672 | Bourne, William O. | Ore-separator | Nov. 24, 1857 | II. |
| 17073 | Boyman, T. B. (See Lachicotte and Bowman) | Liquors on tap, method of excluding air from | April 21, 1857 | XI. |

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|-------|--|--|---------------------|----------|
| 16371 | Boyd, Samuel..... | Hoes, manufacture of..... | Jan. 12, 1857..... | II |
| 16496 | Boyers, Jacob, and D. S. Greer..... | Sowing seed broadcast, machines for..... | Oct. 27, 1857..... | I. |
| 16523 | Boyers, Jacob..... | Wagons, couplings for..... | Feb. 3, 1857..... | X. |
| 17074 | Boyle, James E., and G. P. Perrini (See Perrini and Boyle.)..... | Faucets, waste-way in..... | April 21, 1857..... | XI. |
| 17550 | Brabyn, John L..... | Laths for buildings..... | June 16, 1857..... | IX. |
| 16462 | Bradbury, Samuel..... | Hedges, trimming, machines for..... | Jan. 27, 1857..... | I. |
| 18081 | Bradford, Charles K..... | Thread, spooling, machines for..... | Sept. 1, 1857..... | III. |
| 16903 | Bradford, George S..... | Yarns, manufacturing, from mixed cotton and wool..... | Mar. 31, 1857..... | III. |
| 17775 | Bradish, Theodore H. and James P..... | Teeth, artificial, fastening, to the metallic plate..... | July 14, 1857..... | XX. |
| 16679 | Bradley, Christopher C..... | Iron kettles, cast, grinding the inner surface of..... | Feb. 24, 1857..... | II. |
| 16331 | Bradley, Cornell..... | Valves for steam-engines..... | Jan. 6, 1857..... | VI. |
| 16461 | Bradley, R. P..... | Shearing sheep, machines for..... | Jan. 27, 1857..... | I. |
| | Bradley, W. L., L. W. Hubbard, and N. L. Bradley. (See Chincini, Pietro, assignor.)..... | | | |
| 452 | Bradshaw, John A., assignor to Joseph P. Martin..... | Sewing-machines..... | April 14, 1857..... | Reissue. |
| 453 | Bradshaw, John A., assignor to Joseph P. Martin..... | Sewing-machines..... | April 14, 1857..... | Reissue. |
| | Brainerd, A. H. and C. H. (See Willmott, William W., assignor.)..... | | | |
| 17538 | Bramwell, William, assignor to Samuel P. Ayres..... | Hydrants, incasing, method of..... | June 9, 1857..... | XI. |
| 17312 | Brand, C. C. (See Sibley, Rufus, assignor.)..... | Projectiles..... | May 19, 1857..... | XIX. |
| 17251 | Brand, Christopher C..... | Barracks, portable..... | May 12, 1857..... | IX. |
| 17257 | Brauer, Louis..... | Car-brakes, railroad bumper..... | May 12, 1857..... | IX. |
| 17664 | Braugh, John..... | Blast-blower..... | June 30, 1857..... | XI. |
| 16372 | Brayton, Robert..... | Dies..... | Jan. 13, 1857..... | II. |
| 17914 | Brayton, Robert..... | Nut-machines..... | Aug. 4, 1857..... | II. |
| | Breling, J. and D. E., et al. (See Gattman, Isaac, assignor.)..... | | | |
| 16575 | Brettell, Francis S., and Joseph B. Friable..... | Fire-arms..... | Feb. 10, 1857..... | XIX. |
| 16795 | Brickley, John F..... | Pump-lifting, converting a, into a sectional forcing pump, and vice versa..... | Mar. 10, 1857..... | XI. |
| 17551 | Bridge, James..... | Hatchways, safety attachment for..... | June 26, 1857..... | IX. |
| 18889 | Bridwell, H. L..... | Washing-machine..... | Dec. 22, 1857..... | XVII. |
| 18182 | Briggs, Edward T..... | Window-sash, mode of sustaining..... | Sept. 15, 1857..... | IX. |
| 16574 | Brigg, J. C..... | Melodious..... | Feb. 10, 1857..... | XVIII. |
| 18790 | Briggs, Joseph W., assignor to Judeon A. Lezell..... | Harness-traces, device for fastening..... | Dec. 1, 1857..... | XVI. |
| 17363 | Briggs, Silas P..... | Planter, hand seed..... | May 26, 1857..... | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|--------------------|---------|
| 17417 | Briggs, Silas P..... | Mowing-machines..... | June 2, 1857..... | I. |
| 18525 | Brigham, Odis and Seth..... | Anvils..... | Feb. 3, 1857..... | II. |
| 17455 | Broad, Asa O..... | Band-fastening, metallic, for bales, &c..... | June 9, 1857..... | XII. |
| | Brokaw, Warder, and Child. (See Harding, Thomas, assignor.) | | | |
| 18070 | Brokaw, J. W., assignor to Warder, Brokaw, & Child | Harvesters, automatic, rakes for..... | Aug. 25, 1857..... | I. |
| 18333 | Brokaw, J. W., and Thomas Harding, assignors to Warder, Brokaw, & Child. | Reaping and mowing machines..... | Dec. 8, 1857..... | I. |
| 890 | Bronson, Willis S..... | Furnaces..... | May 26, 1857..... | Design. |
| 18673 | Brooks, S. P..... | Piano-fortes..... | Nov. 24, 1857..... | VIII. |
| 16324 | Broughton, John..... | Door-springs..... | Jan. 6, 1857..... | II. |
| 16464 | Broughton, John..... | Sash-fastener..... | Jan. 27, 1857..... | II. |
| 17258 | Broughton, John..... | Planters, corn..... | May 12, 1857..... | I. |
| | Brown, Alexander H., and A. B. Gray. (See Gray & Brown.) | | | |
| | Brown & Smith, assignors to Leibbrand, McDowell, & Co. (See Smith & Brown.) | | | |
| | Brown & Smith, assignors to Leibbrand, McDowell, & Co. (See Smith & Brown.) | | | |
| | Brown & Smith, assignors to Leibbrand, McDowell, & Co. (See Smith & Brown.) | | | |
| | Brown & Smith, assignors to Wolf, Moore, & Co. (See Smith, G., & H. Brown.) | | | |
| | Brown, Smith, & Read, assignors to Leibbrand, McDowell, & Co. (See Smith, Brown, & Read, assignors.) | | | |
| | Brown, Smith, & Read, assignors to Leibbrand, McDowell, & Co. (See Smith, Brown, & Read, assignors.) | | | |
| | Brown, Smith, & Sallor, assignors to Abbott & Lawrence. (See Smith, Brown, & Sallor, assignors.) | | | |

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| 18443 | Brown, E., S. M. Buckingham, <i>et al.</i> (See Van Gieson, William, as Ignor) | Huskens, corn | Oct. 13, 1857 | I. |
| 508 | Brown, Edmund. (See Ames, Nathan, assignor.) | Planters, seed | Nov. 10, 1857 | Reissue. |
| 17313 | Brown, George K. | . | | |
| 18570 | Brown, George W. | Lumber, pieces of, arrangement of devices for dressing | May 19, 1857 | XIV. |
| 425 | Brown, H., G. Smith, and S. H. Sailor, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.) | Sawing-machine | Nov. 10, 1857 | XIV. |
| 17486 | Brown, Harvey | Saws, reciprocating, mode of driving | Feb. 3, 1857 | Reissue. |
| 16524 | Brown, Isaac | . | | |
| 16463 | Brown, Isaac, and M. W. St. John. (See St. John & Brown.) | Cart, self-loading | June 9, 1857 | X. |
| 17259 | Brown, J. S. | Lamps, lard | Feb. 3, 1857 | V. |
| 16964 | Brown, J., assignor to Joseph Kent. | Speeders | Jan. 27, 1857 | III. |
| 17722 | Brown, James S. | Roasting meat, apparatus for | May 12, 1857 | V. |
| 18731 | Brown, John C., and John P. Derby | Shingle machine | April 7, 1857 | XIV. |
| 18381 | Brown, John L. | Bridges, truss | July 7, 1857 | IX. |
| 18082 | Brown, Josiah, jr. | Rakes, hay | Dec. 1, 1857 | I. |
| 16678 | Brown, L. & A. C. | Candle-making, preparing fats for | Oct. 13, 1857 | IV. |
| 515 | Brown, Morgan W. | . | | |
| 863 | Brown, R. W., and Asa Blood. (See Blood, sr., & Brown.) | Coal-lifters | Sept. 1, 1857 | V. |
| 940 | Browne, J. D. | Hinges | Feb. 24, 1857 | II. |
| 17369 | Brownfield, Thomas | Carriages, wheels for | Dec. 15, 1857 | Reissue. |
| 16877 | Bruce, George | Printing-types | Jan. 6, 1857 | Design. |
| 17260 | Bruce, George | Type | Sept. 8, 1857 | Design. |
| 18952 | Bruce, James A., assignor to president and directors of Maryland Portable Gas Company. | Gas-generators | May 12, 1857 | IV. |
| 18133 | Bruen, John H. | Planters, hand seed | Feb. 24, 1857 | I. |
| 18799 | Bruen, John H. | Planters, seed | May 12, 1857 | I. |
| 18674 | Bruen, John H. | Fences, portable field, method of connecting the panels of | Dec. 29, 1857 | IX. |
| 18133 | Brunlin, Ludwig | Verdigris, processes for manufacturing | Sept. 8, 1857 | IV. |
| 18799 | Brunswick, John M. | Billiard-table cushions | Dec. 8, 1857 | XXII. |
| 18674 | Bryan, John | Rolling-mills, application of hot water to journals of. | Nov. 24, 1857 | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|--------------|
| 16966 | Bryant, Joel..... | Winches, hoisting, for shipboard..... | April 7, 1857..... | VII. |
| 448 | Bryant, Joel..... | Gauges, carpenters'..... | April 14, 1857..... | Reissue. |
| 17532 | Bryant, Joel..... | Hydrant..... | June 16, 1857..... | XI. |
| 17563 | Bryant, Joel..... | Plane-bench, stock for..... | June 16, 1857..... | XIV. |
| 175 | Bryant, Joel..... | Winches, hoisting, for shipboard..... | Aug. 11, 1857..... | Add'l imp't. |
| 475 | Bryant, Merton C., assignor to E. B. Bigelow..... | Looms for weaving piled fabrics..... | June 30, 1857..... | Reissue. |
| 16396 | Bryson, Robert..... | Huskera, corn..... | Oct. 13, 1857..... | I. |
| 16904 | Buchanan, Robert C., (bvt. lieut. colonel)..... | Boat, portable..... | Mar. 31, 1857..... | VII. |
| 18332 | Buck, Isaac N..... | Churn-dashers..... | Oct. 13, 1857..... | I. |
| | Buckingham, S. M., & al. (See Van Gelron, W. H., assignor.)..... | | | |
| 17915 | Buckman, Ira, Jr..... | Gun, walking-stick..... | Aug. 4, 1857..... | XIX. |
| | Buffalo Eagle Iron Works Company. (See Dunbar & Robertson, assignors.)..... | | | |
| 17419 | Bullard, S. M..... | Hinge, door..... | June 2, 1857..... | II. |
| | Bullard, William A., & al. (See Griggs, George S., assignor.)..... | | | |
| 18900 | Bullock, Chester..... | Mowing-machines, cutting apparatus of..... | Dec. 8, 1857..... | I. |
| 18953 | Bullock, William H..... | Locomotives, arrangement of deflecting plates and spark-receiver in..... | Dec. 22, 1857..... | VII. |
| 17827 | Bundy, Galusha J..... | Potatoes, planting, machine for..... | July 21, 1857..... | I. |
| 18274 | Bunker, Charles J..... | Life-preservers..... | Sept. 29, 1857..... | VII. |
| 18954 | Bunnell, Isaac S..... | Potato-diggers..... | Dec. 29, 1857..... | I. |
| 17665 | Burden, Henry..... | Horse-shoes, machine for making..... | June 30, 1857..... | II. |
| 17418 | Burdick, Jason L..... | Printing-presses..... | June 2, 1857..... | XVIII. |
| | Burditt, Riley, and D. L. Sprague. (See Sprague & Burditt.)..... | | | |
| 16796 | Burditt, Riley, and Hatael P. Green..... | Melodeons..... | Mar. 10, 1857..... | XVIII. |
| 17196 | Burge, J. H. H. and William J..... | Splint apparatus, surgical..... | May 6, 1857..... | XX. |
| | Burgee, S. F., and H. N. Gambrill. (See Gambrill & Burgee.)..... | | | |

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|-------|--|--|----------------|------------|
| 18839 | Burgee, S. F., and H. N. Gambrell. (See Gambrell & Burgee.) | Casters for furniture..... | Dec. 15, 1887 | XVII. |
| 17076 | Burger, Timothy P. | Heaters, oak..... | April 21, 1887 | V. |
| 17018 | Burgess, Simeon | Cooler for wine, beer, and other liquids in barrels..... | April 14, 1887 | V. |
| 17793 | Burgin, John F. | Pasteboard, &c., machine for cutting..... | July 7, 1887 | III. |
| 17490 | Burnhaus, Denzlow | Fibre of banana, plantain, aloe, &c., machinery for preparing the..... | June 2, 1887 | III. |
| 874 | Burleigh, M. C. | Stove-doors..... | Mar. 10, 1887 | Design. |
| 17075 | Burnap, W. H. (See Chester, Benjamin, assignor) | Fences, portable field, method of clamping and unclamping panels of..... | April 21, 1887 | IX. |
| 17539 | Burnett, William B. | Cocks, basin, &c., valvular arrangement for..... | June 9, 1887 | XI. |
| 16373 | Burnham, E. G., assignor to himself and Henry A. Chapin. | Pumps..... | Jan. 13, 1887 | XI. |
| 16713 | Burnham, James S. | Sewing-machines..... | Mar. 3, 1887 | III. |
| 17261 | Burnham, Joseph W. | Fire-arms, windage in, mode of overcoming the..... | May 12, 1887 | XIX. |
| 17127 | Burnside, Ambrose E. | Fluid-metre..... | April 21, 1887 | XI. |
| 17127 | Burr, Samuel J., assignor to himself and H. F. Read. | Slates, school..... | April 14, 1887 | XXII. |
| 17019 | Burrell, Samuel R. | Drills, rock..... | Mar. 10, 1887 | IX. |
| 16787 | Burridge, Thomas H. | Horse-powers..... | Sept. 22, 1887 | XIII. |
| 18233 | Burritt, Joseph C., and William H. Atkins, assignors. (See Atkins & Burritt, assignors.) | Knitting-machines..... | Sept. 24, 1887 | Extension. |
| 16638 | Burroughs, G. F., and D. A. Webster. (See Webster & Burroughs.) | Hames, machine for making..... | Feb. 17, 1887 | II. |
| 18801 | Burt, George E., and Abram and George F. Wright. | Hemp, flax, and other fibrous material, mode of treating..... | Dec. 8, 1887 | III. |
| 16714 | Burt, Henry | Hammers, trip..... | Mar. 3, 1887 | II. |
| 16680 | Burt, Henry, and James T. Hedden. | Syringe, cauterizing..... | Feb. 24, 1887 | XX. |
| 16714 | Bushnell, Henry | Paint, India rubber..... | Sept. 15, 1887 | IV. |
| 16680 | Bussell, Erastus T. | | | |
| 16714 | Buswell, Eckler & Co. (See Pease, Henry, assignor.) | | | |
| 16680 | Buswell, Eckler & Co. (See Pease, Henry, assignor.) | | | |
| 18183 | Butcher, William and William A. | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------------|--------|
| 18497 | Butler & McNish. (See McNish, Henry L., assignor.) | Butter-workers | Oct. 27, 1857 | I. |
| 18184 | Butler, Alonzo, and N. C. Harris. (See Harris & Butler.) | Gas-generators | Sept. 15, 1857 | IV. |
| 17020 | Butler, David C. (See McNish, H. L., assignor.) | Felt-cloth, crossing the fibres of wool in making, machinery for. | April 14, 1857 | III. |
| 17487 | Butler, Thomas B. | Felt-cloth, manufacturing, machinery for. | June 9, 1857 | III. |
| 17628 | Butler, Thomas B., (No. 1) | Felt-cloth, machines for manufacturing | July 21, 1857 | III. |
| 16571 | Butler, W. S., assignor to Butler, Sugden, & Co. | Pistols | Feb. 3, 1857 | XIX. |
| 18185 | Butt, Ze. | Excavators | Sept. 15, 1857 | IX. |
| 17314 | Butt, Ze. | Truck, hand | May 19, 1857 | X. |
| 15383 | Butt, Ze. | Trucks, self-dumping, arrangement of | Oct. 13, 1857 | IX. |
| 17021 | Butter, John, <i>et al.</i> (See Ball, E., assignor.) | Sugar, preparation of, called "table manna" | April 14, 1857 | IV. |
| 17603 | Butterfield, G. F., and D. Lovejoy. (See Lovejoy & Butterfield.) | Root-counters, skiving, machine for | June 16, 1857 | XVI. |
| 18496 | Butterfield, Merano | Rice, bruishing, machine for | Oct. 27, 1857 | XIII. |
| 18384 | Butterfield, William, and Bradford Stetson, assigns to themselves and Elmer Townsend. | Churns | Oct. 13, 1857 | I. |
| 16711 | Byard, Moses | Pen and pencil-holder | Mar. 3, 1857 | XVIII. |
| 16326 | Cady, William | Sawing-machines, cross-cut | Jan. 6, 1857 | XIV. |
| 17022 | Cahill, John H. | Furnaces, hot-air | April 14, 1857 | V. |
| 18083 | Cahoon, Charles W. | Seeding-machines | Sept. 1, 1857 | I. |
| 16374 | Cairns, W. and J. | Blacking-boxes, implement for holding | Jan. 13, 1857 | XXII. |
| | Caldicott, Thomas F. (See Warrall, Thomas D., assignor.) | | | |
| | Caldicott, Thomas F. (See Gladwin, Porter A., assignor.) | | | |

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|-------|--|---|---------------------|--------------------|
| 16556 | Oakley, Thomas L., assignor to himself and J. W. Biles. | Combs..... | Mar. 17, 1857..... | XXI |
| 16955 | Callagan, John..... | Jacks, lifting..... | Dec. 20, 1857..... | XII. |
| 16526 | Calvert, F. A., and C. G. Sargent..... | Cotton, cleaning, machines for..... | Feb. 3, 1857..... | III. |
| 16933 | Cambridge, P. C., and D. M. Cummings. (See Cummings & Cambridge.) | | | |
| | Camp, Mortimer M..... | Boats, life..... | Sept. 22, 1857..... | VII. |
| | Campbell & Ross. (See Ross, Benjamin, and John C. Campbell.) | | | |
| 17077 | Campbell, Augustine..... | Chimney-dampers..... | April 21, 1857..... | V. Reissue. |
| 485 | Campbell, Edward..... | Journal-box, glass..... | Aug. 25, 1857..... | |
| 18314 | Campbell, Ethan, assignor to W. P. Page and Edward F. Hodges. | Propelling apparatus, marine..... | Sept. 29, 1857..... | VII. |
| 16620 | Campbell, Samuel, assignor to John C. Whitin..... | Warps, dressing, machinery for..... | Nov. 10, 1857..... | III. |
| 16327 | Campbell, Trixtram, and Henry B. Poorman..... | Bullet-moulds..... | Jan. 6, 1857..... | XIX. |
| | Campbell, W. F., and James T. Henry. (See Henry & Campbell.) | | | |
| 17363 | Canby, Samuel..... | Grain scourers and separators..... | May 26, 1857..... | XIII. |
| 18036 | Canfield, West & Co. (See Batcheller, L. B.) | | | |
| 16564 | Canfield, Sheldon..... | Umbrellas and parasols..... | Aug. 25, 1857..... | XXI. |
| | Cannon, Mary Ann, assignor to New York and Brooklyn Brass Company. | Brass-kettle machine..... | Feb. 3, 1857..... | II. |
| 17196 | Carhart, Jeremiah..... | Melodeons, &c., swells for..... | May 5, 1857..... | XVIII. Reissue. |
| 484 | Carhart, Jeremiah..... | Musical, instruments, reed..... | Aug. 25, 1857..... | |
| 17867 | Carle, Ira..... | Compositions, tanning..... | July 28, 1857..... | IV. |
| 16870 | Carleton, Albert S..... | Cotton flannel..... | Mar. 24, 1857..... | III. |
| | Carleton, William. (See Dexter, Henry, assignor.) | | | |
| 18322 | Carlie, Charles..... | Packing wool, machine for..... | Oct. 6, 1857..... | XII. |
| 16769 | Carlton, Isaac, assignor to John Wybird..... | Lamps, locomotive and other, reflectors for..... | Mar. 3, 1857..... | V. |
| 17355 | Carney, Nathaniel B., assignor to J. R. Livingston, Chas. H. Haswell, and Russell C. Root, trustees. | Looms..... | May 19, 1857..... | III. |
| 17491 | Carpenter, Calvin, jr..... | Horse-shoe nails, machine for making..... | June 9, 1857..... | II. |
| 17916 | Carpenter, D. H..... | Burners, vapor..... | Aug. 4, 1857..... | V. |
| 18676 | Carpenter, E. B., and E. N. Merriam..... | Melodeons, &c., coupling for..... | Nov. 24, 1857..... | XVIII. |
| 16898 | Carpenter, Hiram, assignor to American Iron Railway Company..... | Railroads..... | Mar. 24, 1857..... | IX. |
| 18037 | Carpenter, John..... | Blind-alata, device for piercing, to receive the staples..... | Aug. 25, 1857..... | IX. |
| 18791 | Carpenter, Simmons W., assignor to William W. Woodworth. | Gas-retorts, cleaning..... | Dec. 1, 1857..... | IV. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------------|--------|
| 17194 | Carpenter, Stephen D. | Printing subscribers' names on newspapers, machine for. | May 5, 1857 | XVIII. |
| 18002 | Carroll, James | Planters, seed | Dec. 8, 1857 | I. |
| 18321 | Carley, Hiram | Stove cover stands | Oct. 6, 1857 | V. |
| 18186 | Carver, William H., and J. Beckley | Roofing, mastic | Sept. 15, 1857 | IX. |
| 18187 | Caryl, A. H. | Mowing-machines | Sept. 15, 1857 | I. |
| 18188 | Caryl, A. H. | Reaping-machines, raking attachment for | Sept. 15, 1857 | I. |
| 18730 | Case, Jarvis | Seeding-machines | Dec. 1, 1857 | I. |
| 18803 | Case, Jarvis | Ploughs | Dec. 8, 1857 | I. |
| 18432 | Case, John, and Isaac Soules | Furnaces | Oct. 20, 1857 | V. |
| 18675 | Cassell & Galbraith. (See Vedder, N. S., assignor.) | Arithmometer for adding | Nov. 24, 1857 | VIII. |
| 18672 | Cavendy, Edward | Latitude at sea, approximate method of determining | Nov. 10, 1857 | VIII. |
| 18671 | Cawthra, Joseph | Husker, corn | Nov. 10, 1857 | I. |
| 17492 | Cawthron, William L. | Railroad switch lock | June 9, 1857 | IX. |
| 17554 | Chamberlain & Co. (See Young, Elias, assignor.) | Leather, &c., splitting ridged, hoop knife for | June 16, 1857 | XVI. |
| 18719 | Chamberlain, D. H., assignor to himself and John Borrowdale. | Lamps, vapor-burning | Nov. 24, 1857 | V. |
| 17794 | Chamberlain, Dexter H. | Steering apparatus | July 7, 1857 | VII. |
| 17493 | Chamberlin, M. C. | Wagon-brake, self-acting | June 9, 1857 | X. |
| 18386 | Chamberlin, M. C. | Wagon-brake | Oct. 13, 1857 | X. |
| 16718 | Chamberlin, Nathan L. | Press, hand printing | Mar. 3, 1857 | XVIII. |
| 18533 | Chambers, Cyrus, jr. | Folding paper, machines for | Nov. 3, 1857 | XVIII. |
| 16720 | Chambers, Edward G. | Shears, sheep | Mar. 3, 1857 | I. |
| 17023 | Chandeler, Thomas A. | Pendulum levels or inclinometers | April 14, 1857 | VIII. |
| 17355 | Channing, William F., and Moses G. Farmer, assignors to William F. Channing. | Telegraph for cities, electro-magnetic fire-alarm | May 19, 1857 | VIII. |
| 17494 | Chapin, George L. | Mitre-box | June 9, 1857 | XIV. |
| | Chapin, Henry A., & al. (See Burnham, E. G., assignor.) | | | |

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|-------|--|--|-------|----------|----------|
| 18439 | Chapin, William A..... | Sowing seed broadcast, machines for | Oct. | 30, 1857 | I. |
| | Charlton & Ellis. (See Ellis & Charlton.) | | | | |
| 18397 | Chaprio, P. F..... | Fire-arms, hair-triggers for..... | Oct. | 13, 1857 | XIX. |
| 948 | Chase, Ira, Jr., (2)..... | Brackets, shelf..... | Oct. | 13, 1857 | Design. |
| 949 | Chase, Ira, Jr., (1)..... | Brackets, shelf..... | Oct. | 13, 1857 | Design. |
| 958 | Chase, Ira, Jr., (3)..... | Brackets, shelf..... | Oct. | 20, 1857 | Design. |
| 967 | Chase, Ira, Jr..... | Borders, grave..... | Oct. | 20, 1857 | Design. |
| 18732 | Chase, Joel..... | Sewing-machines..... | Dec. | 1, 1857 | III. |
| 18498 | Chase, John K..... | Jars, &c., metallic screw cap for | Oct. | 27, 1857 | XVII. |
| | Chase, North, and North (See S. W. Gibbs.) | | | | |
| | Chase, North, and North. (See N. S. Vedder.) | | | | |
| | Chase, North, and North. (See Vedder, N. S., assignor.) | | | | |
| | Chase, North, and North. (See Vedder, N. S., assignor.) | | | | |
| 17262 | Chase, O. R. and S. E..... | Lozenges, machines for making..... | May | 12, 1857 | XX. |
| 16512 | Chatman, Alfred F., assignor to A. F. Chatman and J. Pecare. | Door-spring..... | Jan. | 27, 1857 | II. |
| 16524 | Cheney, John L..... | Looms, power..... | Mar. | 17, 1857 | III. |
| 16465 | Chesbrough & al. (See Coon, David, assignor.) | Water-wheels, direct horizontal, method of inserting the buckets in the shafts of. | Jan. | 27, 1857 | XI. |
| 17024 | Chemut, John S..... | Jack, lifting..... | April | 14, 1857 | XII. |
| 18941 | Chester, Benjamin, assignor to W. H. Burnap..... | Belting, mode of..... | Dec. | 22, 1857 | XIII. |
| 17666 | Chester, J. H..... | Radiator, portable steam, for heating apartments. | June | 30, 1857 | V. |
| 16565 | Chichester, Lewis S., assignor to Henry G. Evans. | Cotton-gins..... | Feb. | 3, 1857 | III. |
| 17819 | Chichester, Lewis S., assignor to Henry G. Evans. | Cotton, cleaning..... | July | 14, 1857 | III. |
| 17725 | Chicken, William..... | Button-holes, instruments for cutting..... | July | 7, 1857 | XXI. |
| 17495 | Chilcott, John..... | Ovens, bakers'..... | June | 9, 1857 | V. |
| 477 | Chilcott, John, and Robert Snell..... | Boots and shoes, cutting out the uppers of, method of. | July | 7, 1857 | Release. |
| | Child, Warder, & Brokaw. (See Harding, Thomas, assignor.) | | | | |
| | Child, Warder, & Brokaw. (See Brokaw & Harding, assignors.) | | | | |
| 862 | Chinnock, Charles..... | Clock-case fronts..... | Jan. | 6, 1857 | Design. |
| 17618 | Chipman, Willard A..... | Plane-irons in their stocks, method of holding and adjusting. | Jan. | 23, 1857 | XIV. |
| 16932 | Choate, Warren C., and Charles N. Tyler..... | Gas, hydrogen and wood, combining..... | Feb. | 24, 1857 | IV. |
| 18038 | Chubb, Thomas J..... | Ore, separating..... | Aug. | 25, 1857 | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|----------------------|-------------|
| 18095 | Chubb, Thomas J | Ore-separator | Sept. 1, 1857 | II. |
| 18388 | Chubb, Thomas J | Ore-separator | Oct. 13, 1857 | II. |
| 18966 | Church, Harvey. (See Mathews, E. S., assignor.) | Washing-machine | Dec. 29, 1857 | XVII. |
| 916 | Churchman, Thomas C | Clock-cases | Oct. 6, 1857 | Design. |
| 936 | Chinquini, Pietro | Clock-case front | Aug. 26, 1857 | Design. |
| 946 | Chinquini, Pietro, assignor to W. D. Bradley, W. Hubbard, and N. L. Bradley. | Clock-cases | Oct. 6, 1857 | Design. |
| 17687 | Clark, A. T | Mills, flouring, distributing apparatus of | June 30, 1857 | XIII. |
| 481 | Clark, Alfred T | Mills, flouring, distributing apparatus of | Aug. 4, 1857 | Reissue. |
| 16380 | Clark, Benjamin, assignor to E. L. Ferguson and C. B. Clark. | Tables, extension | Jan. 6, 1857 | XVII. |
| 18733 | Clark, Charles B | Tables, extension | Dec. 1, 1857 | XVII. |
| 18191 | Clark, Edwin | Mill-stones, hanging | Sept. 15, 1857 | XIII. |
| 18234 | Clark, Edwin | Mill-stone drivers, bearings for | Sept. 22, 1857 | XIII. |
| 17869 | Clark, Everard M | Smut-machines | July 28, 1857 | XIII. |
| 17189 | Clark, George H | Beds, invalid | Sept. 15, 1857 | XVII. |
| 16788 | Clark, Hiram | Harvesters | Mar. 10, 1857 | I. |
| 18135 | Clark, H. M | Wrench | Sept. 8, 1857 | II. |
| 18574 | Clark, James M | Mills, flouring, distributing apparatus of | Nov. 10, 1857 | XIII. |
| 18119 | Clark, L. J., & al. (See Fountain, Jas. L., assignor.) | Synthies to smuttes, mode of attaching | Sept. 1, 1857 | I. |
| 17422 | Clark, Oliver, assignor to Aaron H. Finney | Engines, steam, packing-pistons and stuffing-boxes of | June 2, 1857 | VI. |
| 17469 | Clark, Patrick | Pasteboard or paper, machines for drying | June 9, 1857 | III. |
| 173 | Clark, Patrick | Engines, steam, packing-pistons and stuffing-boxes of | July 28, 1857 | Add'l Imp't |
| 17917 | Clark, Patrick | Paper, machines for making | Aug. 4, 1857 | III. |
| 18235 | Clark, Patrick | Engines, steam, metallic packing-rings for | Sept. 22, 1857 | VI. |
| 16966 | Clark, Sylvanus S | Window-blinds, folding | April 7, 1857 | IX. |
| 17736 | Clark, Thomas | Water, &c., flow of, through pipes, chamber to effect uniformity of | July 7, 1857 | XI. |

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|-------|---|---|----------------------|-------------|
| 17291 | Clark, W. A., S. D. Porter, and W. D. Simpson .. | Mill-stones, method of hanging | June 2, 1857 | XIII. |
| 17298 | Clark, William N | Auger-handle, fastening | July 28, 1857 | XIV. |
| 18190 | Clark, William N | Paper-pulp, from ivory, making | Sept. 15, 1857 | III. |
| 18227 | Clark, William N | Door-guard, elastic | Nov. 17, 1857 | IX. |
| 18719 | Clarke, E. E. | Boxes, pasteboard for, machine for cutting | Mar. 3, 1857 | XXII. |
| 17348 | Clarke, George F., assignor to himself and William M. Littell. | Valves, safety, arrangement of, within steam-boilers. | May 19, 1857 | VI. |
| 16302 | Clarke, George R. and Samuel Adams | Delineator, grade | Mar. 31, 1857 | VIII. |
| 16226 | Clary, John, and David O. Paige. (See Paige & Clary.) | Telegraphic fire-alarm apparatus, device in | Nov. 17, 1857 | III. |
| 16731 | Clay, Edward C | Harvesters | Mar. 3, 1857 | I. |
| 17078 | Clemens, S. A | Awl-haft | April 21, 1857 | II. |
| 18226 | Clement, N. S | Scythes to mashes, mode of attaching | Oct. 6, 1857 | I. |
| 18226 | Clement, William T | Straw-cutters | Dec. 15, 1857 | I. |
| 18226 | Clement, Moses, deceased, William T. Clements, administrator of | | | |
| 18226 | Clinkard, H. R. and G. Gilmour. (See Gilmour, George, assignor.) | | | |
| 18226 | Clinchard, William, and James Apperly. (See Apperly & Clinchard.) | | | |
| 18140 | Clock, Jesse M | Wind-wheels, vane for | Oct. 20, 1857 | XI. |
| 18214 | Clow, Charles, Abram, and Charles N | Forks, agricultural | Dec. 8, 1857 | I. |
| 17555 | Clute, Nicholas | Harvesters | June 16, 1857 | I. |
| 18192 | Coan, W. L., and C. D. Kellogg. (See Kellogg & Coan.) | | | |
| 17364 | Coates, Abraham, and Samuel M. Perry | Ships' pumps | Sept. 15, 1857 | VII. |
| 18134 | Coates, Elias F | Metal, cutting and bending sheet, machine for | May 26, 1857 | II. |
| 18134 | Coates, Sanders | Gas-retorts | Sept. 8, 1857 | IV. |
| 16466 | Cobb, Samuel | Corpus-preservers | Jan. 27, 1857 | XXII. |
| 18361 | Coburn, Francis S., assignor to W. W. Messer and George F. Gray. | Printing-press, hand | Mar. 17, 1857 | XVIII. |
| 16597 | Cochran, Alexander M | Window-blinds | Feb. 3, 1857 | IX. |
| 16945 | Cochrane, James | Fluid-metre | Mar. 31, 1857 | XI. |
| 17185 | Cochrane, John W | Gauges for coals | April 28, 1857 | VIII. |
| 18064 | Coe, Aury G | Straw-cutters | Sept. 1, 1857 | I. |
| 162 | Coeysman, J., and C. J. Halstead. (See Halstead & Coeyman.) | | | |
| 162 | Coffin, David N. B., jr | Filter | April 14, 1857 | Add'l mp't. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date | Class. |
|-------|---|---|----------------|--------------|
| 17488 | Coffin, David N. B., Jr. | Carpet-fastenings | June 9, 1857 | XVII. |
| 18323 | Coffin, David N. B., Jr. | Curtain-rollers | Oct. 6, 1857 | XVII. |
| 17315 | Coffin, David N. B., Jr., and Henry D. Stover. | Planing-machines, dogging lumber in, devices for | June 9, 1857 | XIV. |
| 17604 | Coffin, David, Jr., assignor to Boston Faucet Company. | Faucet-machines | June 16, 1857 | XI. |
| 16385 | Coffin, Isaac N. | Lamps, lard | Mar. 17, 1857 | V. |
| 18434 | Coggeshall, W. T. | Stove and furnace grate | Oct. 20, 1857 | V. |
| 18569 | Coggeshall, William, and B. B. Warner | Seedling-machines | Dec. 29, 1857 | I. |
| 963 | Coggeshall, William T. (See Dean, Daniel H., assignor.) | Stoves | Nov. 3, 1857 | Design. |
| 17669 | Colby, Curtius | Excavator, earth | June 30, 1857 | IX. |
| 17570 | Cole, Calvin | Pendulum-levels, adjustment applied to | July 28, 1857 | VIII. |
| 164 | Cole, Charles N. | Gate, farm | June 9, 1857 | Add'l Imp't. |
| 17201 | Cole, Ezra | Fence, portable field | May 5, 1857 | IX. |
| 17365 | Cole, James E. | Sails, top, means for reefing | May 26, 1857 | VII. |
| 17780 | Cole, James E. | Ships, rigging of | July 14, 1857 | VII. |
| 18394 | Cole, Jeremiah S., and Harley Stone | Saw-filing machine | Oct. 6, 1857 | XIV. |
| 16367 | Cole, R. H. | Rivets, making, machine for | April 7, 1857 | II. |
| 17197 | Cole, R. H. | Nut-machines | May 5, 1857 | II. |
| 17556 | Cole, R. H. | Axe-polls, machine for making | June 16, 1857 | II. |
| 18499 | Cole, R. H. | Nut-machine | Oct. 27, 1857 | II. |
| 18534 | Cole, R. H. | Bolts, machine for making | Nov. 3, 1857 | II. |
| 17202 | Cole, Solomon | Gates, method of opening and closing by approaching vehicles. | May 5, 1857 | IX. |
| 17619 | Coleman, Ezra | Mill, grinding | June 23, 1857 | XIII. |
| 17918 | Coleman, S. T. J., and J. W. Sibbet | Vehicles, coupling of thills to | Aug. 4, 1857 | X. |
| 18629 | Collen, John B. | Brick-machine | Nov. 17, 1857 | XV. |
| 18193 | Collender, H. W. | Bolts, sockets for | Sept. 15, 1857 | II. |
| 18906 | Collender, H. W. | Billiard-table cushions | Dec. 8, 1857 | XXII. |

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|-------|--|---|---------------------|---------|
| 16631 | Coller, Isaac H..... | File-cutting machine..... | Feb. 94, 1857..... | II. |
| 16436 | Collier, Henry M..... | Car-brakes, railroad, rubbers of..... | Oct. 20, 1857..... | X. |
| 17571 | Collins, E. K..... | Staves, method of sawing, from the bolt, and dressing their edges simultaneously. | July 28, 1857..... | XIV. |
| 16679 | Collins, E. K..... | Shingles, machine for cutting, from the bolt..... | Nov. 24, 1857..... | XIV. |
| 16715 | Collins, Owen, and John Dunley. (See O'Brien, John, assignor.) | Washing-machines..... | Mar. 3, 1857..... | XVII. |
| 16369 | Collier, Robert H..... | Paper pulp from beet and other refuse, preparing..... | Oct. 13, 1857..... | III. |
| 16683 | Colt, Samuel..... | Fire-arms, many-chambered rotating-breech..... | Feb. 24, 1857..... | XIX. |
| 16716 | Colt, Samuel..... | Fire-arms, lubricating, mode of..... | Mar. 3, 1857..... | XIX. |
| 16678 | Colt, Samuel..... | Fire-arms, many-chambered rotating-breech..... | Nov. 24, 1857..... | XIX. |
| 16630 | Colton, Francis..... | India rubber springs for upholstering purposes..... | Nov. 17, 1857..... | XVII. |
| 16436 | Colville, Thomas L., and Samuel Shepherd..... | Threshing-machine for beating off pea-nuts from the vines..... | Oct. 20, 1857..... | I. |
| 16375 | Colvin, Enoch..... | Knitting-machines..... | Jan. 13, 1857..... | III. |
| 16638 | Comfort, Samuel, jr..... | Harvesters, cutting apparatus for..... | April 7, 1857..... | I. |
| 16437 | Comfort, Samuel, jr..... | Harvesters, rakes for..... | Oct. 20, 1857..... | I. |
| 16579 | Comins, R..... | Truss-frames, shoes for..... | Feb. 10, 1857..... | IX. |
| 16530 | Compton, Homer..... | Harness-banes, fastenings for..... | Feb. 3, 1857..... | XVI. |
| 873 | Conatock, Allen..... | Stoves, cooking..... | Mar. 10, 1857..... | Design. |
| 17025 | Conklin, Isaac H..... | Harvesters, raking attachment for..... | April 14, 1857..... | I. |
| 17557 | Conroy, Edward..... | Cork-machine..... | June 16, 1857..... | XXII. |
| 17737 | Conroy, Edward..... | Blow-pipe, alcohol..... | July 7, 1857..... | V. |
| 18325 | Cook, A. M..... | Corn-sheller..... | Oct. 6, 1857..... | I. |
| 18957 | Cook, Cyrus E..... | Saws, clamp for setting..... | Dec. 29, 1857..... | XIV. |
| 16467 | Cook, G & D..... | Carriage-tops, calash..... | Jan. 27, 1857..... | X. |
| 16528 | Cook, George & David..... | Carriages, adjustable seats for..... | Feb. 2, 1857..... | X. |
| 18680 | Cook, George W..... | Spoke-machine..... | Nov. 24, 1857..... | XIV. |
| 17424 | Cook, Julius M..... | Lock..... | Feb. 2, 1857..... | II. |
| 16529 | Cook, Peter..... | Veneers, machine for cutting..... | June 3, 1857..... | XIV. |
| 17542 | Cook, Robert, assignor to himself and Samuel Norton..... | Horse-shoe nails, machine for forging..... | June 9, 1857..... | II. |
| 17263 | Cook, Thomas..... | Match-aplinta, cutting, machines for..... | May 12, 1857..... | XXII. |
| 17316 | Cook, Thomas..... | Matches, dipped, machine for gathering and depositing..... | May 19, 1857..... | XXII. |
| 17670 | Cooke, W. E..... | Uterine supporters..... | June 20, 1857..... | XX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 17668 | Cooley, Anthony..... | Whiffletree-hook..... | June 30, 1857..... | X. |
| 17406 | Coon, David, assignor to himself and B. F. Chee- brough..... | Burglars' alarms..... | May 26, 1857..... | XXII. |
| 18236 | Coon, Simeon..... | Burglars' alarms..... | Sept. 22, 1857..... | XXII. |
| 16639 | Cooper, John H..... | Gas-regulators..... | Feb. 17, 1857..... | IV. |
| 17671 | Cooper, John H..... | Gas-regulators..... | June 30, 1857..... | IV. |
| 18008 | Cooper, John H..... | Gas-regulators..... | Aug. 18, 1857..... | IV. |
| 17672 | Cooper, Peter (See Rich, Obadiah, assignor.) Cooper, William..... | Horse-shoe..... | June 30, 1857..... | II. |
| 18438 | Cope, Ezra, and S. H. Whitaker. (See Whitaker & Cope.)..... | Wagon, dumping..... | Oct. 20, 1857..... | X. |
| 493 | Copeland, Josiah, assignor to Abraham Thayer, assignor to Josiah M. Read, assignor to Josiah Copeland.)..... | Boot-crimps..... | Aug. 11, 1857..... | Reissue. |
| 17864 | Corbin & Marlett..... | Honey, artificial..... | May 12, 1857..... | XXII. |
| 18956 | Corley, Simeon..... | Costs, instrument for draughting..... | Dec. 28, 1857..... | XXI. |
| 17423 | Corliss, George H..... | Pumping apparatus, steam..... | June 2, 1857..... | XI. |
| 18136 | Corliss, George H..... | Engines, steam, metallic packing for pistons of..... | Sept. 8, 1857..... | VI. |
| 17079 | Cornelius, Robert..... | Gas-regulators..... | April 21, 1857..... | IV. |
| 17317 | Cornelius, Robert..... | Gas-regulators..... | May 19, 1857..... | IV. |
| 441 | Cornell, J. B..... | Vault-covers..... | Mar. 24, 1857..... | Reissue. |
| 17138 | Cornell, John B..... | Pavement, side-walk..... | April 28, 1857..... | XIX. |
| 17198 | Cornell, John B. (No. 1)..... | Vault-cover..... | May 5, 1857..... | IX. |
| 17199 | Cornell, John B. (No. 2)..... | Vault-covers..... | May 5, 1857..... | IX. |
| 18677 | Cornell, John B..... | Roofing, metallic, for subterranean vaults..... | Nov. 24, 1857..... | IX. |
| 17318 | Cornwall, George, 2d..... | Hats, &c., heating straw braid for, method of..... | May 19, 1857..... | III. |
| 17200 | Cotton, George W..... | Engines, steam, metal packed pistons for..... | May 5, 1857..... | VI. |
| | Coulaland & Ball. (See Seropyan, Christopher D., assignor.)..... | | | |
| 18928 | Covert, H. W..... | Locks..... | Sept. 15, 1857..... | II. |
| 18573 | Cowdon, John..... | Earth-moving machine..... | Nov. 10, 1857..... | IX. |

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|-------|--|---|---------------------|-------------|
| 16717 | Cowles, E. P. & J. A. | Churns..... | Mar. 3, 1857..... | I. |
| 16938 | Cox, John, and Reuben Newton | Harvesting-machine..... | Nov. 17, 1857..... | I. |
| 479 | Cox, Samuel A., deceased, assignor to Sawyer & Hall, assignors to New York Wrought Iron Railroad Chair Co. | Chairs, railway, beading the lips of wrought iron, machine for..... | July 14, 1857..... | Reissue. |
| 16364 | Cramer, James P., assignor to Hiram Cramer, assignor to James P. Cramer. | Cultivator teeth..... | Jan. 6, 1857..... | I. |
| 16789 | Crane, George B. | Harvesting grain, machines for..... | Mar. 10, 1857..... | I. |
| 17080 | Crane, John E., and P. Putnam. (See Putnam and Crane.) | | | |
| 16468 | Crane, Thomas | Planters, hand seed..... | April 21, 1857..... | I. |
| 17203 | Crangle, George | Brick machine, rotary..... | Jan. 27, 1857..... | XV. |
| 16563 | Crangle, George | Brick machine, rotary..... | May 5, 1857..... | XV. |
| 16531 | Cranelli, John W. | Carriages..... | Jan. 6, 1857..... | X. |
| 16531 | Cranelli, John W. | Forge, smiths'..... | Feb. 3, 1857..... | II. |
| 16631 | Crary, James | Shingle machine..... | Nov. 24, 1857..... | XIV. |
| 16576 | Crawshaw, John | Holisting apparatus for bricks, &c..... | Nov. 10, 1857..... | XII. |
| 17026 | Cresager, Jonathan | Sawing shingles, machine for..... | April 14, 1857..... | XIV. |
| | Creighton, Joseph K. and A. C. Smith. (See Smith and Creighton.) | | | |
| | Cresson, Stuart, and Peterson. (See Beesley and Delany, assignors.) | | | |
| | Cresson, Stuart, and Peterson. (See Beesley and Delany, assignors.) | | | |
| 914 | Cridge, E. J. | Stoves, parlor..... | July 14, 1857..... | Design. |
| 18195 | Critcherson, John | Street sweeping, machines..... | Sept. 15, 1857..... | XXII. |
| 18881 | Critcherson, John, assignor to John Warren | Seeding machines..... | Dec. 15, 1857..... | I. |
| 456 | Critchlow, Alfred P., assignor to A. P. Critchlow & Co. | Picture cases, hinge for..... | April 21, 1857..... | Reissue. |
| 18275 | Croasdale, William | Stable, horse's, cribs of..... | Sept. 29, 1857..... | IX. |
| | Crockett, E., and J. Marland. (See Marland and Crockett.) | | | |
| | Crompton, William, assignor to M. A. Forbush and George Crompton | Looms, figure or fancy power..... | Aug. 28, 1857..... | Disclaimer. |
| 17205 | Crook, Charles | Reaping and mowing machines..... | May 5, 1857..... | I. |
| 18486 | Crooker, George R., assignor to George G. Martin | Fire-arms, repeating, mode of priming..... | Oct. 20, 1857..... | XIX. |
| 17319 | Croome, William | Printing in colors, mode of..... | May 19, 1857..... | XVIII. |
| 18500 | Crosby, Heman, jr. | Umbrellas, cane..... | Oct. 27, 1857..... | XXI. |
| 17204 | Crosby, Jeremiah M. | Door bolt..... | May 5, 1857..... | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|---------------------|----------|
| 17490 | Crosby, Jeremiah M. | Doors, catch for..... | June 9, 1857..... | II. |
| 458 | Crosby, Pearson..... | Saw mills for resawing boards and other timber..... | April 28, 1857..... | Reissue. |
| 18039 | Crosby, Pearson..... | Saw teeth, setting-saw for..... | Aug. 28, 1857..... | XIV. |
| 16352 | Croswan, A. B. | Rudders..... | Jan. 6, 1857..... | VII. |
| 17872 | Croswan, C. P. | Soythes, tempering, machine for..... | July 28, 1857..... | II. |
| 16532 | Croy, John J. | Spokes, tool for tenoning..... | Feb. 3, 1857..... | XIV. |
| | Crumble and Ruberta, assignors to Benson & al. (See Ruberta and Crumble, assignors.) | | | |
| 16325 | Culbertson, James..... | Mill, grinding..... | Jan. 6, 1857..... | XIII. |
| | Culin, Isaac V., and J. B. Sutherland, & al. (See Driver, Samuel, assignor.) | | | |
| 18631 | Culver, Stephen..... | Carpet fastener..... | Nov. 17, 1857..... | XVII. |
| 17265 | Cumming, David..... | Horse shoes..... | May 12, 1857..... | II. |
| 16704 | Cumming, D., jr., assignor to D. Cumming, sr. Cumming, Goodwin, and Hawkins. (See Hawkins, Goodwin, and Cummings) | Boats, steam, shoving-poles for..... | Feb. 24, 1857..... | VII. |
| 18535 | Cummings, D. W., and P. C. Cambridge, jr..... | Morining-machines, chisels in, method of reversing the. | Nov. 3, 1857..... | XIV. |
| | Cummings, E. P., and A. Williams. (See Williams and Cummings.) | | | |
| 16470 | Cummings, George M. | Clamp for soldering spectacles..... | Jan. 27, 1857..... | II. |
| 18194 | Cummings, George M. | Spectacle-bows, machine for expanding..... | Sept. 15, 1857..... | VIII. |
| 18682 | Cummings, James G. | Ploughs..... | Nov. 24, 1857..... | I. |
| 18190 | Cunningham, Robert P. | Clocks..... | Dec. 22, 1857..... | VIII. |
| 18891 | Curtay, Edwin A. | Tables, extension..... | Dec. 22, 1857..... | XVII. |
| | Curtie, Horton, & Steffe, assignors to Churob. (See Steffe, Horton, & Currie, assignors) | | | |
| 18536 | Currie, John, & al. (See Steffe, Horton, & Currie.) | Curtain fixtures..... | Nov. 3, 1857..... | XVII. |
| 16469 | Carrier, John W., and James M. Thompson..... | Hulling rice, machines for..... | Jan. 27, 1857..... | I |
| | Currier, Lewis F. | | | |
| | Curry, Elias, and James Vaudolah. (See Vandolah & Curry.) | | | |

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| 17728 | Curtis, Amasa..... | Grain separators..... | July 7, 1857..... | XIII. |
| 17425 | Curtis, John J..... | Sawing machine, scroll..... | June 2, 1857..... | XIV. |
| 17306 | Curtis, Joseph T..... | Omnibus coffer..... | May 5, 1857..... | X. |
| 16432 | Cushing, E. G..... | Water-wheel, centre-vent..... | Jan. 20, 1857..... | XI. |
| 17207 | Cushing, E. G..... | Straw cutters..... | May 6, 1857..... | I. |
| 16790 | Cushman, Joseph..... | Wire-rope, machinery for making..... | Mar. 10, 1857..... | II. |
| 18652 | Cushman, Lewis H..... | Clothes-clamp..... | Nov. 17, 1857..... | XVII. |
| 18137 | Custer, Christian..... | Grain, &c., drying, machine for..... | Sept. 8, 1857..... | XIII. |
| 16871 | Cutler, William D. (See Fuller, William S., as- signor.) | Lubricating under pressure, method of..... | Mar. 24, 1857..... | XII. |
| 16840 | Daggett, David P..... | Cultivators..... | Dec. 15, 1857..... | I. |
| 18906 | Dale, John D..... | Planing machine..... | Dec. 8, 1857..... | XIV. |
| 16356 | Dalton, Thomas L..... | Anchor..... | Jan. 6, 1857..... | VII. |
| 17751 | Dana, Charles H..... | Churns..... | July 14, 1857..... | I. |
| 16355 | Daniels, E..... | Tanning hides..... | Jan. 6, 1857..... | XVI. |
| 17496 | Daniels, Reuben..... | Water-wheel..... | June 2, 1857..... | XI. |
| 18390 | Daniels, Reuben..... | Harvesters..... | Oct. 13, 1857..... | I. |
| 17573 | Darby, George, and James E. Young..... | Planing machines, shell-roller bed for..... | July 28, 1857..... | XIV. |
| 18327 | Darling, Samuel..... | Squares, metallic, manufacture of..... | Oct. 6, 1857..... | VIII. |
| 16376 | Strange & Darling.) Davenport, Joseph T..... | Rails, fixed, arrangement of, as a substitute for rail- road switches..... | Jan. 13, 1857..... | IX. |
| 16908 | David, V. R..... | Lock..... | Mar. 31, 1857..... | II. |
| 16956 | Davidson, Charles H. and Herman E., assignors to Charles H. Davidson. | Syringe, enema..... | Mar. 31, 1857..... | XX. |
| 17919 | Davis, B., and A. A. Roberts. (See Roberts & Davis.) Davis, George N., and Israel P. Nelson. (See Nel- son, Israel P., assignor.) Davis, George N., and Thomas J. Mayall. (See Mayall, Thomas J., assignor.) Davis, J. A..... | Stoves, coal..... | Aug. 4, 1857..... | V. |
| 18960 | Davis, James F., H. Twitchell, and D. R. Aver ill. (See Averill, D. R., assignor.) Davis, John..... | Sawing hand-rails or stair-wreaths, machine for..... | Dec. 29, 1857..... | XIV. |
| 18226 | Davis, John C., and William Miller..... | Printing press, rotary..... | Mar. 17, 1857..... | XVIII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|--------|
| 18423 | Davis, Joseph, assignor to himself and Royal Southwick. | Carding-machines..... | Oct. 13, 1857..... | III. |
| 18567 | Davis, Mervin, assignor to Peter G. Bergen..... | Printing-presses..... | Nov. 3, 1857..... | XVIII. |
| 18684 | Davis, Rhoda..... | Cans and bottles, sealing, elastic cap for..... | Feb. 24, 1857..... | XVII. |
| 17027 | Davis, Robert W. and Daniel..... | Jack, lifting..... | April 14, 1857..... | XII. |
| 18391 | Davis, S. E..... | Twine-reels..... | Oct. 13, 1857..... | III. |
| | Davis, W., and James E. Serrell. (See Serrell & Davis.) | | | |
| 16969 | Davis, Washington F..... | Sails, reefing..... | April 7, 1857..... | VII. |
| 18892 | Day, J. C..... | Nut-machine..... | Dec. 22, 1857..... | II. |
| 18683 | Day, Joseph C..... | Boats, ferry, means for stopping and starting..... | Nov. 24, 1857..... | VII. |
| 18576 | Day, Justus..... | Beans, machine for pulling..... | Nov. 10, 1857..... | I. |
| 18537 | Day, Samuel S..... | Door-knobs, rose for..... | Nov. 3, 1857..... | II. |
| 16926 | Deacon, Edward, assignor to John Warrin..... | Fishing-rod reels..... | Feb. 10, 1857..... | XXII. |
| 18088 | Deal, Peter, and James Greenman..... | Staves, sawing, machine for..... | Sept. 1, 1857..... | XIV. |
| 17540 | Dean, Daniel H., assignor to Wm. T. Coggeshall..... | Grates, fire, or linings of fire pots..... | June 8, 1857..... | V. |
| 17028 | De Bofion, Benjamin N..... | Filtering liquids, apparatus for..... | April 14, 1857..... | XI. |
| 16471 | Decamp, Michael..... | Grain-separators..... | Jan. 27, 1857..... | XIII. |
| 17081 | Decker, John..... | Planters, hand seed..... | April 21, 1857..... | I. |
| 18841 | Decker, Levi..... | Billiard-table cushions..... | Dec. 15, 1857..... | XXII. |
| 17029 | De Forrester, T. B..... | India-rubber hose, machinery for manufacturing..... | April 14, 1857..... | IV. |
| | Degener, F. O., and George F. Gordon. (See Gordon and Degener.) | | | |
| 18086 | Degraw, Henry N..... | Bottles, washing, machine for..... | Sept. 1, 1857..... | XXII. |
| 18501 | Dellum, John R., and Jasper Snell..... | Coal, breaking, machines for..... | Oct. 27, 1857..... | V. |
| | Delany & Beesley, assignors to Cresson, Stuart, & Peterson. (See Beesley & Delany.) | | | |
| | Delany, E. J., and J. Beesley, assignors to Cresson, Stuart, & Peterson. (See Beesley & Delany, assignors.) | | | |
| 18030 | De La Peyrouse, L. L. A. Ellae, assignor to M. J. A. Guilet. | Tanning liquids..... | Aug. 18, 1857..... | IV. |

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| 184-3 | Demary, Newcomb, jr., assignor to James Yates..... | Snow-plough | Dec. 15, 1857..... | X. |
| 18382 | Deming, Timothy | Hones, artificial | Oct. 13, 1857..... | XV. |
| | Griscom & Denn. | | | |
| 16722 | Dennis, Paul | Potato-diggers | Mar. 3, 1857..... | L |
| 16348 | Derby, J. Perley | Studs, bosom | Jan. 6, 1857..... | XXI. |
| 16533 | Derby, John P. | Shirt-bosom studs | Feb. 3, 1857..... | XXI. |
| 16640 | Derby, John P. | Plus, bosom | Feb. 17, 1857..... | XXI. |
| 16872 | Derby, John P. | Studs, shirt | Mar. 24, 1857..... | XXI. |
| 16909 | Derby, John P. | Buttons, sleeve | Mar. 31, 1857..... | XXI. |
| | Derby, John P., and J. G. Brown. (See Brown & Derby.) | | | |
| 16472 | Derby, Lyman | Tailors' measures | Jan. 27, 1857..... | XXI. |
| 16723 | De Sendimir, Joseph | Windwheels, method of suspending in self-revolving or adjusting frames. | Mar. 3, 1857..... | XL |
| | De Vaughan, Samuel, and W. P. Wood. (See Hedge, assignor.) | | | |
| 18040 | Devlan, P. S. | Brick-machines | Aug. 25, 1857..... | XV. |
| 18407 | Devlin, John | Sewing thimbles | Dec. 8, 1857..... | III. |
| 14621 | Dewey, H. N., assignor to B. L. Hill & Co. | Quilting frame | Nov. 10, 1857..... | XVII. |
| 16954 | Dewey, Henry L., assignor to H. L. Dewey and L. W. Newton. | Plane-stocks, carpenters', machine for cutting the throats of | Mar. 31, 1857..... | XIV. |
| 19005 | De Witt, E. H., assignor to himself and Butler N. Strong. | Sawing-machines | Dec. 29, 1857..... | XIV. |
| | De Witt, E. V., jr. (See Newbury, F. D., assignor.) | | | |
| 919 | Dexter, Henry, assignor to William Carleton. | Status of General Warren | Aug. 4, 1857..... | Design. |
| 18502 | De Yampert, T. J. | Press, steam cotton | Oct. 27, 1857..... | XII. |
| 16910 | De Zeng, Henry L. | Bullet-mould | Mar. 31, 1857..... | XIX. |
| 18138 | Dick, James M. | Wheels, carriage, tires of, mode of tightening | Sept. 8, 1857..... | X. |
| 18633 | Dickson, Alexander | Washing-machine | Nov. 17, 1857..... | XVII. |
| 17960 | Dillaway, Hiram | Glassware holders | Aug. 11, 1857..... | XV. |
| 18139 | Dillman, Andrew | Corn shellers | Sept. 8, 1857..... | I. |
| 16377 | Dimick, Horace E. | Ordnance, rifling, mode of | Jan. 13, 1857..... | XIX. |
| 17139 | Dias, Leger | Locks | April 28, 1857..... | II. |
| | Dobyns, T. J. (See Slivey, Joseph C., assignor.) | | | |
| | Dodenhoff, I., and J. P. Green. (See Green and Dodenhoff.) | | | |
| 17729 | Dodenhoff, Israel | Harvesters, corn | July 7, 1857..... | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------------|--------------|
| 18009 | Dodenhoff, Israel | Harvesters, raking apparatus for | Aug. 18, 1857 | I. |
| 17730 | Dodge, Joseph B. | Window-frame box | July 7, 1857 | IX. |
| 17920 | Dodge, Josiah | Cannon, mode of discharging | Aug. 4, 1857 | XIX. |
| 18057 | Dodge, Levi | Hatchet-heads, swaging, machine for | Sept. 1, 1857 | II. |
| 16580 | Dodson, Elisha B. | Powder, gun | Feb. 10, 1857 | IV. |
| 18141 | Dolph, George C. | Mowing-machines | Sept. 8, 1857 | I. |
| 18533 | Dolson, William H. | Paints, oil, mixing and grinding, apparatus for | Nov. 3, 1857 | IV. |
| 18808 | Doolittle, Zina | Hubs, boring machine for | Dec. 8, 1857 | XIV. |
| 18893 | Doolittle, Zina | Carriage-hubs, band-portion of machine for turning | Dec. 22, 1857 | XIV. |
| 18328 | Dorr, Albert | Packing wool, machine for | Oct. 6, 1857 | XII. |
| 16907 | Dorr, James A., Ira Hersey, and Edward G. Oldfield | Brick-machines | Mar. 31, 1857 | XV. |
| 18658 | Doster, Herman A., assignor to himself and Smith A. Skinner | Husker, corn | Nov. 17, 1857 | I. |
| 18503 | Doster, Herman A., & al. (See Skinner, Smith A.) | Fruit-gatherers | Oct. 27, 1857 | I. |
| 17498 | Doty, William | Grain-separators | June 9, 1857 | XIII. |
| | Dowd, Elihu | | | |
| | Dougherty, H., and J. P. Miller. (See Miller and Dougherty) | | | |
| | Douglas, A., jr., & al. (See Niles, Peter H.) | Bucales | April 21, 1857 | XXI. |
| 17082 | Douglas, Alexander | | | |
| 18981 | Douglas, Alfred, jr. (See Peter H. Niles.) | Car, railroad, or carriage springs | Dec. 29, 1857 | X. |
| 17605 | Douglas, George | Bed-bottom spring | June 16, 1857 | XVII. |
| | Dow, George W., assignor to himself and Walter F. French | Winnowers | Dec. 15, 1857 | Add'l imp't. |
| 181 | Doyle, Thomas J. | Mortising the stiles for blind slate, machine for | April 28, 1857 | XIV. |
| 17141 | Drake, D. T. | | | |
| | Drake, Flanders, and Fox. (See Flanders, Drake, and Fox.) | | | |
| | Draper, George, and W. W. Dutcher. (See Dutcher and Draper.) | | | |

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|-------|---|---|---------------------|----------|
| 17300 | Driggs, Spencer B | Plane-for-its actions..... | May 19, 1857..... | XVIII. |
| 17407 | Dricoll, J. B. | Roofing-machines | June 9, 1857..... | IX. |
| 18424 | Driver, Samuel, assignor to himself, Isaac V. Culin, and J. B. Sutherland. | Bomb-shell | Oct. 13, 1857..... | XIX. |
| 17140 | Dufresne, A. Henry | Steel and other metals, gliding and ornamenting | April 28, 1857..... | II. |
| 18010 | Dugdale, Edward | Furnaces, grate-bars of..... | Aug. 18, 1857..... | V. |
| 17030 | Dugdale, Thomas A. | Washing-machines | April 14, 1857..... | XVII. |
| 18720 | Dugdale, Thomas A., assignor to himself and Geo. Taylor. | Washing-machines | Nov. 24, 1857..... | XVII. |
| 920 | Dulley, J. J., and Russell Mann, assignors to Geo. W. Eddy. | Stoves..... | Aug. 4, 1857..... | Design. |
| 17715 | Dunbar, Robert, and John F. Robertson, assignors to the Buffalo Eagle Iron Works Company. | Capstans, ships' | June 30, 1857..... | VII. |
| 18237 | Dunham, Isaac A. | Boot and shoe soles, edge-planes for trimming..... | Sept. 22, 1857..... | XVI. |
| 18238 | Dunham, John G. | Reaping and mowing-machines | Sept. 22, 1857..... | I. |
| 969 | Dunklee, B. W. | Stoves | Dec. 15, 1857..... | Design. |
| 16378 | Dunklee, Henry, and H. Kelsea. (See Kelsea, H., assignor.) | Wind-wheels, automatic, regulator for..... | Jan. 13, 1857..... | XI. |
| 486 | Dunkley, Joseph..... | Wind-wheels, automatic, regulator for..... | Aug. 25, 1857..... | Release. |
| 17558 | Dunley, John, and Owen Collins. (See O'Brien, John, assignor.) | Bed, invalid, elevators..... | June 16, 1857..... | XVII. |
| 17321 | Dunming, D. S. | Gunpowder | May 19, 1857..... | XIX. |
| 16354 | Dupont, Lamont | Looms | Jan. 6, 1857..... | III. |
| 17957 | Duraud, Francois | | | |
| 17496 | Durgin, C. A., and Joseph Thomas. (See Thomas, Joseph, assignor.) | | | |
| 18577 | Durgin, Charles A., & al. (See La Baw, George W., assignor.) | | | |
| 454 | Dutcher, Warren W | Looms | April 21, 1857..... | Release. |
| 17559 | Dutcher, Warren W | Looms, roller-temple for..... | June 16, 1857..... | III. |
| 17957 | Dutcher, W. W., and George Draper | Looms, hook-templates for | May 12, 1857..... | III. |
| 17496 | Dutcher, William R. | Rope-machines | June 9, 1857..... | III. |
| 18577 | Dwight, Timothy..... | Railways, rails for | Nov. 10, 1857..... | IX. |
| 17673 | Dyar, Harrison Gray..... | Telegraphs, electric..... | June 30, 1857..... | VIII. |
| 16770 | Dyar, Nathan A., assignor to N. A. Dyar and S. D. Woodbury. | Roofing-materials, mastic..... | Mar. 3, 1857..... | IX. |
| 16379 | Dyott, M. B. | Lamps, fluid-burning | Jan. 13, 1857..... | V. |
| 16473 | Eads, James B | Blasting rocks under water, apparatus for | Jan. 27, 1857..... | IX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|--------|
| 17500 | Eames, Lovett..... | Hub-blocks for the lathe, machine for preparing.... | June 9, 1857..... | XIV. |
| 18196 | Earl, Charles H..... | Bridges..... | Sept. 15, 1857..... | IX. |
| 18578 | Eastman, J. L..... | Locomotive boilers, attaching steam-gauges to..... | Nov. 10, 1857..... | VI. |
| 17560 | Eastman, Joseph L..... | Gauge, pressure..... | June 16, 1857..... | VI. |
| 17561 | Eaton, A. K..... | Iron, cast, making malleable..... | June 16, 1857..... | II. |
| 17562 | Eaton, A. K..... | Compound, depilating, for hides..... | June 16, 1857..... | IV. |
| 17142 | Eaton, Bowen..... | Steam-cylinders, arrangement of ports in..... | April 28, 1857..... | VI. |
| 17208 | Ebbert, Peter S..... | Locomotives, heating, feed-water apparatus of..... | May 5, 1857..... | VI. |
| 18094 | Eberly, David..... | Ploughs, shovel..... | Dec. 22, 1857..... | I. |
| | Eckler, Buswell, & Co. (See Pease, Henry, assignor.) | | | |
| | Eckler, Buswell, & Co. (See Pease, Henry, assignor.) | | | |
| | Eddy, George W. (See Dalley & Mann, assignor.) | | | |
| 16357 | Eddy, Henry..... | Stalls for horses, mode of constructing..... | Jan. 6, 1857..... | IX. |
| | Edgerton, H., and G. W. Walton. (See Walton & Edgerton) | | | |
| 17782 | Edwards, Edwin..... | Lathe, automatic..... | July 14, 1857..... | XIV. |
| 16911 | Eggers, Selmar, and Julius Grudobos. (See Grudobos & Eggers.) | Shingle-machine, rotary..... | Mar. 31, 1857..... | XIV. |
| 16725 | Eggleston, Philander..... | Sawing-mill, circular..... | Mar. 3, 1857..... | XIV. |
| 16474 | Eggleston, Jeremiah D..... | Bee-hives, feed-boxes of..... | Jan. 27, 1857..... | I. |
| 18995 | Eihervaiser, John..... | Press, wine and cider..... | Dec. 22, 1857..... | XII. |
| 18962 | Eidlitz, Leopold..... | Safes, burglar-proof..... | Dec. 29, 1857..... | II. |
| 16380 | Eliass, Augustus..... | Stair-cases..... | Jan. 13, 1857..... | IX. |
| 18239 | Eliass, Augustus..... | Port-folio or music stands..... | Sept. 22, 1857..... | XVIII. |
| 18721 | Elliot, David, assignor to himself and Isaac White. | Washing-machine..... | Nov. 24, 1857..... | XVII. |
| 16581 | Elliot, William H..... | Printing-stamp..... | Feb. 10, 1857..... | XVIII. |
| 16593 | Elliot, William H..... | Valve-throttle of marine engines, arrangement of means for controlling the. | Feb. 10, 1857..... | VI. |



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|-------|--|---|----------------------|--------|
| 16941 | Ellis, William H | Prieking-stamp | Feb. 17, 1857..... | XVIII. |
| 16963 | Elliot, J. B. | Lighting-rod, device for attaching..... | Dec. 29, 1857..... | VIII. |
| 16963 | Ellis, Joel A. H., assignor to Joel Woodbury as trustee. | Wooden slate, &c., form or mould on which, are made into baskets. | Mar. 31, 1857..... | XIV. |
| 16970 | Ellis, Joel A. H., assignor to Joel Woodbury as trustee. | Baskets, construction of..... | April 7, 1857..... | XXII. |
| 16534 | Ellis, Seth C. | Tenons on blind slate, machine for cutting..... | Feb. 3, 1857 | XIV. |
| 18276 | Ellis, William M. and Jonas B. | Boilers, steam..... | Sept. 29, 1857 | VI. |
| 17366 | Ellihorp, Solomon B. | Sewing-machines..... | May 26, 1857 | III. |
| 17032 | Ellis, Josiah | Fire-arms, revolving | April 14, 1857 | XIX. |
| 17143 | Ellis, Josiah | Fire-arms | April 28, 1857 | XIX. |
| 18140 | Ellis, J. W., and James Charlton | Planters, seed | Sept. 8, 1857 | I. |
| 18329 | Ellsworth, Marcus E. | Reaping and mowing machines | Oct. 6, 1857 | I. |
| 17031 | Emerson, James | Ship-sails reefing..... | April 14, 1857 | VII. |
| 17367 | Emerson, Ralph, jr. | Harvesting-machines, tongue and caster plate for | May 26, 1857 | I. |
| 17144 | Emert, E. | Drills, seed | April 28, 1857 | I. |
| 17499 | Emery, Charles E. | Printing press, card..... | June 9, 1857 | XVIII. |
| 17731 | Emery, William, jr. | Huaking corn, machine for | July 7, 1857 | I. |
| 17620 | Erdle, Jacob | Saw-net..... | June 23, 1857 | XIV. |
| 18684 | Erdle, Jacob | Saws, filing, machine for | Nov. 24, 1857 | II. |
| 17921 | Erdmann, John F. W. | Planers, smoothing, stock for | Aug. 4, 1857 | XIV. |
| 15329 | Ernst, John G. | Fire-hook | Jan. 6, 1857 | V. |
| 17793 | Espy, Mills B. | Cans, &c., bottles, device for sealing | July 14, 1857 | XVII. |
| 16873 | Esterly, George | Harvesting-machines..... | Mar. 4, 1857 | I. |
| 16971 | Esterly, George | Reaping-machines | April 7, 1857 | I. |
| 17209 | Ettlack, Thomas | Vessels, ice-cutting attachment to | May 6, 1857 | VII. |
| 17145 | Evanson, Halvor. | Planters, seed..... | April 28, 1857 | I. |
| 16724 | Evans, George M. | Car-wheel, railway, making tire for | Mar. 3, 1757 | X. |
| 18625 | Evans, Henry G. (See Chickester, Lewis S., assignor.) | Skates | Nov. 24, 1857 | XXII. |
| 17501 | Evans, Henry G. (See Chickester, Lewis S., assignor.) | Maledones | June 6, 1857 | XVIII. |
| 16724 | Evans, James | Car-wheel, railway, making tire for | Mar. 3, 1757 | X. |
| 18625 | Evans, Stockton H., and L. Gentech | Skates | Nov. 24, 1857 | XXII. |
| 17501 | Evans, William | Maledones | June 6, 1857 | XVIII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date | Class. |
|-------|--|---|--|--------------|
| 17563 | Evarts, James M..... Everett, H., and C. L. Rehn. (See Rehn & Everett.) | Screw-cutter..... Washing-machines..... | June 16, 1857..... Aug. 25, 1857..... | II. XVII. |
| 18041 | Everitt, Hiram F..... | Washing-machines..... | Aug. 25, 1857..... | XVII. |
| 17621 | Fass, Anthony..... | Baskets, fastening handles to..... | June 23, 1857..... | XXII. |
| 17632 | Fairbanks, Horatio..... | Burners, vapor..... | June 23, 1857..... | V. |
| 18069 | Fairbanks, Leonard O..... Fairbanks, R. G., and S. R. Wilnot. (See Wilnot and Fairbanks.) | Saw-clamp..... | Sept. 1, 1857..... | XIV. |
| 18792 | Fairbanks, S. D., assignor to himself and Charles H. Adams. | Knitting-machine..... | Dec. 1, 1857..... | III. |
| 16381 | Fairbanks, T..... | Scales, platform..... | Jan. 13, 1857..... | XII. |
| 445 | Fairbanks, Thaddeus..... | Scales, platform..... | Mar. 31, 1857..... | Reisme. |
| 18441 | Faict, A. R. E., and Paul Stoerger..... | Leather, &c., striping, machine for..... | Oct. 20, 1857..... | XVI. |
| 17322 | Fallon, John..... | Printing-machines, calico, blanket for..... | May 19, 1857..... | XVIII. |
| 16828 | Farley, H. W., and J. H. Freeman, assignors. (See Freeman & Farley, assignors.) Farmer, M. G., and A. F. Woodman..... Farmer, Moses G., and William F. Channing. (See Channing & Farmer.) Farnham, D. P..... | Telegraphic repeaters..... | Mar. 17, 1857..... | VIII. |
| 16535 | Farrar, William B., and Jonathan H. Fay, Lucian..... | Wells, raising water from, self-operating device for tilting buckets in. Tables, self-waiting..... | Feb. 3, 1857..... | XI. |
| 18042 | Farrar, William B., and Jonathan H. Fay, Lucian..... | Tables, self-waiting..... | Aug. 25, 1857..... | XVII. |
| 17874 | Fay, Lucian..... | Roofs, sheet-metal, machine for sewing..... | July 28, 1857..... | IX. |
| 17922 | Fay, Lucius N., and William Mason..... | Window-blinds, mode of opening and closing..... | Aug. 4, 1857..... | IX. |
| 17923 | Fay, Lucius N., and William Mason..... | Window-blinds, slats of, device for operating..... | Aug. 4, 1857..... | IX. |
| 17961 | Fee, Willi n R..... | Hulling cotton seed, machines for..... | Aug. 11, 1857..... | I. |
| 17953 | Feger, D. H., assignor to himself and Daniel Shepherd. Felthousen, R. B., and William Gage. (See Gage & Felthousen.) | Cars, railroad, pedestal for..... | Aug. 4, 1857..... | X. |

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|-------|--|--|-----------------|--------|
| 16791 | Felthousen, Richard B., and William Gage. (See Gage & Felthousen.) | Gates, farm, device for raising or lowering, to allow them to open over obstacles. | Mar. 10, 1857. | IX. |
| 17033 | Fenn, William A. | Hats, felt, brims of, machines for forming the | April 14, 1857. | III. |
| 17063 | Fenn, William A. | Hat-bodies, blocking, machines for | April 21, 1857. | III. |
| 18896 | Fenner, Nicholas A. | Hinges, casting. | Dec. 2, 1857. | II. |
| 17323 | Ferguson, D. M., and G. L. Kelly. (See Lloyd, Daniel, assignor.) | Looms, shuttle, motion for | May 19, 1857. | III. |
| 17924 | Ferguson, E. L., and L. B. Clark. (See Clark, Benjamin, assignor.) | Boilers, steam | Aug. 4, 1857. | VI. |
| 18539 | Ferguson, Robert. | Vessels, unloading, apparatus for | Nov. 3, 1857. | VII. |
| 16320 | Fernald, James. | Filters, method of attaching, to supply-pipes. | Jan. 6, 1857. | XI. |
| 17829 | Ferry, William M., Jr. | Sawing-mill | July 21, 1857. | XIV. |
| 18793 | Fetter, George, assignor to himself and Edward Jones | Sewing-machines | Dec. 1, 1857. | III. |
| 17146 | Field, Charles H. | Engraving designs on watch and locket cases, &c., machine for. | April 28, 1857. | XVIII. |
| 16792 | Field, Edmund | Key-holes, escutcheon for | Mar. 10, 1857. | II. |
| 16827 | Field, George B. and Benjamin F. | Walls of buildings, mode of veneering the | Mar. 17, 1857. | IX. |
| 16536 | Fields, W., and S. Gerhardt | Hydrant | Feb. 3, 1857. | XI. |
| 16726 | Filley, Newberry, & Co. (See Vedder, W. S., assignor.) | Bridge-trusses. | Mar. 3, 1857. | IX. |
| 16382 | Fink, Albert | Sewing-machines | Jan. 13, 1857. | III. |
| 17784 | Fink, Milton. | Washing-machines | July 14, 1857. | XVII. |
| 17368 | Fisher, Adam | Curtain-rollers | Aug. 26, 1857. | XVII. |
| 17962 | Fisher, Chandler. | Water-closets | May 11, 1857. | IX. |
| 18580 | Fisher, Lewis | Stoves for burning tan, sawdust, &c. | Nov. 10, 1857. | V. |
| 16784 | Fisher, Samuel. | Mill, grinding, flour-bolt as applied to | Jan. 13, 1857. | XII. |
| 16383 | Fiske, Orin W. (See Weeks, Asa, assignor.) | Planing-machines, arrangement of feed-rollers for | Aug. 11, 1857. | XIV. |
| 17963 | Fitch, Sanford E., and Theodore Sharp | Violins | May 19, 1857. | XVIII. |
| 17324 | Fitta, Benajah | | | |
| 17324 | Fitta, Bradley | | | |
| 17324 | Fitta, Robert B. (See Mihan, Patrick, assignor.) | | | |
| 17324 | Fitta, Robert B. (See Mihan, Patrick, assignor.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|---------|
| 17270 | Fitzgerald, Daniel..... Flanders, A., and A. M. Gould. (See Gould & Flanders.) | Houses, portable, mode of constructing..... | May 12, 1857..... | IX. |
| 18394 | Flanders, Wooster A., and James B. Drake, and A. M. Fox. | Saw-mill | Oct. 13, 1857..... | XIV. |
| 16358 | Fletcher, Robert H..... | Valves, slide, of steam-engines, operating..... | Jan. 6, 1857..... | VI. |
| 18197 | Fletcher, Robert H..... | Valves of steam-engines, operating..... | Sept. 15, 1857..... | VI. |
| 18240 | Flowers, Andrew B. J..... | Harvesters | Sept. 22, 1857..... | I. |
| 17884 | Floyd, James E., assignor to Theodore C. Kibbe.. | Retort-covers | July 21, 1857..... | IV. |
| 16671 | Floyd, Thomas, assignor to T. Floyd and G. H. Merklein. | Sash-fastener..... | Feb. 17, 1857..... | II. |
| 17034 | Floyd, William, and John Tilton. (See Tilton & Floyd.) | | | |
| 18540 | Focht, George..... | Bucket, hoisting, for coal, &c..... | April 14, 1857..... | XII. |
| 18277 | Focht, George..... | Hoisting-buckets..... | Nov. 3, 1857..... | XII. |
| | Folwell, John T..... | Jewelry, fastenings for | Sept. 29, 1857..... | XVIII. |
| | Forbush, M. A., and George Crompton. (See Crompton, William, assignor.) | | | |
| | Force, D. N., and D. E. Rugg. (See Rugg, Datus E., assignor.) | | | |
| | Force, D. N., and S. W. Warren. (See Warren, S. W., assignor.) | | | |
| 18686 | Ford, Elias T..... | Harvester rake | Nov. 24, 1857..... | I. |
| 17785 | Ford, William P..... | Mattresses | July 14, 1857..... | XVII. |
| | Fordyce, John, and George Hall. (See Hall & Fordyce.) | | | |
| 18442 | Forney, D. P..... | Cultivators, cotton..... | Oct. 20, 1857..... | I. |
| 18330 | Forhee, William J..... | Cultivators | Oct. 6, 1857..... | I. |
| 17925 | Forythe, F. R..... | Cultivator-teeth | Aug. 4, 1857..... | I. |
| 18090 | Foster, Elbridge..... | Life-preserving berths for steam and other vessels .. | Sept. 1, 1857..... | VII. |
| 943 | Foster, George B..... | Gas-burners, shade for | Sept. 22, 1857..... | Design. |
| 16537 | Foster, George P..... | Forging gun-lock springs | Feb. 3, 1857..... | II. |

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|-------|--|--|---------------------|--------|
| 18619 | Foster, Isaac C..... | Water, lifting, machinery for..... | Dec. 16, 1857..... | XI. |
| 18443 | Foster, J. T..... | Sawing-machine..... | Oct. 20, 1857..... | XIV. |
| 18374 | Foster, J. T., J. J. Banta, and J. H. Banta..... | Doors, windows, &c., weather strips for..... | Mar. 24, 1857..... | IX. |
| 16372 | Foster, J. T., J. J. Banta, and J. H. Banta..... | Chairs, sofas, and other articles, forming spiral springs for..... | April 7, 1857..... | XVII. |
| 18833 | Foster, James D., and H. C. Foster, and John Q. Miller..... | Boats, ice-breaking..... | Dec. 8, 1857..... | VII. |
| 16980 | Foster, John T., and Jacob J. Banta, assignors to themselves and James H. Banta..... | Gun, muzzle-loading, piston for..... | Mar. 17, 1857..... | XIX. |
| 16672 | Foster, Junius, assignor to J. Herbold, George Kuhn, and Junius Foster..... | File-machine..... | Feb. 17, 1857..... | XV. |
| 16775 | Foster, Junius, assignor to Herbold, George Kuhn, and Junius Foster..... | Iron, swaging, machine for..... | Mar. 3, 1857..... | II. |
| 18659 | Fountain, James L., assignor to himself, L. J. Clark, B. McKenney, and C. M. Fountain..... | Harvesters, cutting apparatus for..... | Nov. 17, 1857..... | I. |
| 18426 | Fournier, F. B. (See Kinman & Fournier, assignors.)..... | Boilers, steam, water-indicator for..... | Oct. 13, 1857..... | VI. |
| 17084 | Fournier, F. B., and D. Hinman, assignors to themselves and I. Munroe..... | Rope, making, machines for..... | April 21, 1857..... | III. |
| 16475 | Fowler, Henry A..... | Hammers, fastenings for..... | Jan. 27, 1857..... | XVI. |
| 18043 | Fowler, Thaddeus..... | Pin-sticking machine..... | Aug. 26, 1857..... | II. |
| 18631 | Fowler, Thaddeus, assignor to the American Pin Company..... | Pin-sticking machine..... | Dec. 8, 1857..... | II. |
| 16726 | Fox, Flanders, & Drake. (See Flanders, Drake, & Fox.)..... | Harvesting standing corn, machines for..... | Mar. 3, 1857..... | I. |
| 18734 | Francisco, James H..... | Printing-machine..... | Oct. 27, 1857..... | XVIII. |
| 18579 | Francisco & Weimer. (See Weimer & Francisco.)..... | Seeding-machines..... | Nov. 10, 1857..... | I. |
| 17796 | Franklin, Albert..... | Planters, corn..... | July 14, 1857..... | I. |
| 17263 | Franklin, Alvin..... | Bridle-bits, connecting the cheek piece to the mouth piece of, method of..... | May 12, 1857..... | XVI. |
| 18734 | Frazier, Kason..... | Mechanical movements for regulating the action of a fly-wheel on the working parts of machinery connected with it..... | Dec. 1, 1857..... | XIII. |
| 18174 | Frederick, Abram C..... | Calibrator-teeth..... | Sept. 8, 1857..... | I. |
| 18174 | Freeman, Edmund L., assignor to himself and J. and G. Lord & Co..... | Corn, ears of, severing from the stalks, machines for..... | Oct. 27, 1857..... | I. |
| 18505 | French, A. J. and J. A..... | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|--------------------|----------|
| 16929 | French, E. F..... | Bill-holder | Mar. 17, 1857..... | XVIII. |
| 17269 | French, E. F..... French, Walter F., and G. W. Dow. (See Dow, G. W., assignor.) Friabee, Joseph B., and F. S. Brettell. (See Brettell & Friabee.) | Corn-huskers..... | May 12, 1857..... | I. |
| 16913 | Frye, Jesse..... | Plough, prairie..... | Mar. 31, 1857..... | I. |
| 16912 | Frye, Jesse..... | Plough, gang..... | Mar. 31, 1857..... | I. |
| 17010 | Fuller, William S., assignor to William D. Cutler. | Fences, iron, method of constructing..... | April 7, 1857..... | IX. |
| 16797 | Fulton, James..... | Chronometer-casements..... | Mar. 3, 1857..... | VIII. |
| 16973 | Fuzzard, William..... | Hat-bodies, felting, machines for..... | April 7, 1857..... | III. |
| 18444 | Gaar, Abram..... | Grain-separators, screens for..... | Oct. 30, 1857..... | XIII. |
| 17564 | Gage, Charles W..... | Butter-workers..... | June 16, 1857..... | I. |
| 17732 | Gage, William, and R. B. Felthousen..... | Core, dry sand..... | July 7, 1857..... | II. |
| 18064 | Gage, William, and R. B. Felthousen..... | Core, dry sand..... | Dec. 29, 1857..... | II. |
| 18581 | Gaget, A. A..... Galbraith & Casell. (See Vedder, N. S., assignor.) Galbreath, John H. (See Justice & Galbreath.) | Muslo, &c., apparatus for holding..... | Nov. 10, 1857..... | XVIII. |
| 17964 | Gale, Alanson..... | Mowing-machines..... | Aug. 11, 1857..... | I. |
| 17885 | Gale, W. S., assignor to Peter Poillon..... | Steam-tight, means for rendering joints..... | July 21, 1857..... | VI. |
| 17733 | Gallager, Mahlon J..... | Gun-locks, self-printing..... | July 7, 1857..... | XIX. |
| 17271 | Gallagher, C. B..... | Engines, steam, semi-rotative..... | May 12, 1857..... | VI. |
| 888 | Gallaher, John S., jr..... | Churns, egg-beaters, &c..... | May 19, 1857..... | Design. |
| 18065 | Galusha, W. M., and D. W. Safford..... | Wash-boards..... | Dec. 29, 1857..... | XVII. |
| 509 | Gambrell, H. N., and S. F. Burgee..... | Carding-machines..... | Nov. 17, 1857..... | Release. |
| 18124 | Gambrell, Horatio N., and Singleton F. Burgee..... | Carding-engines..... | Sept. 1, 1857..... | III. |
| 17830 | Gamotis, Laurent, and Sabin Martin..... Grantz, Bernhard, & Hendermeyer. (See Bern- hard, Joseph, assignor.) | Acid sulphate of lime, apparatus for making..... | July 21, 1857..... | IV |
| 16794 | Gardiner, Perry G..... | Steel-plates, machine for shearing..... | Mar. 10, 1857..... | II. |
| 16793 | Gardiner, Perry G..... | Steel-springs, coiling, machine for..... | Mar. 10, 1857..... | II. |
| 16915 | Gardner, Perry G..... | Car-springs, railway, machine for creasing plates for..... | Mar. 31, 1857..... | X |

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|-------|--|--|--------------------|-------|
| 16916 | Gardner, Perry G..... | Car-springs, railway, from mandrel, machine for dis- engaging..... | Mar. 31, 1857..... | X. |
| 16945 | Gardner, Samuel, Jr..... | Gas, mode of lighting, by electricity..... | Dec. 22, 1857..... | V. |
| 17502 | Gardner, Smith..... | Nails, wrought, machine for making..... | June 9, 1857..... | II. |
| 18120 | Gardner, Eleazar S., assignor to Smith, Gould, & Co..... | Lathes, sliding-rest for..... | Sept. 1, 1857..... | XIV. |
| 18338 | Gardner, G. A. (See Hope, John D., assignor.) Gardner, George A. (See Jenks & Gardner, as- signors.) Gardner, George A. (See Lemuel P. Jenks, as- signor.) Gardner, G. W..... | Stove-grates, shaker-bars of..... | Feb. 3, 1857..... | V. |
| 18541 | Gardner, Henry F., et al. (See Willmott, William W., assignor.) Gardner, John..... | Candy-twisting machine..... | Nov. 3, 1857..... | XXII. |
| 16675 | Garlick, C. P., and M. G. Blackstone..... | Fences, field, the panels of, mode of securing to each other..... | Feb. 17, 1857..... | IX. |
| 17210 | Garlick, Isaac D..... | Fences, portable field, panels of method of uniting and sustaining the..... | May 5, 1857..... | IX. |
| 16946 | Garlick, John T..... | Bedsteads and sofas, life-preserving..... | Mar. 31, 1857..... | XVII. |
| 17211 | Garlington, Thomas C..... | Ploughs..... | May 5, 1857..... | I. |
| 17272 | Garvey, Benjamin..... | Sewing, needles for..... | May 12, 1857..... | III. |
| 16887 | Gas, Jacob, assignor to himself and George Mowton..... | Coal, slating, machines for..... | Nov. 24, 1857..... | V. |
| 16539 | Gaston, J. C..... | Sowing grain and fertilizers, machines for..... | Feb. 3, 1857..... | I. |
| 17674 | Gates, Asa D..... | Gas-burners..... | June 30, 1857..... | V. |
| 17325 | Gates, J. E..... | Grain, cleaning, machines for..... | May 19, 1857..... | XIII. |
| 16331 | Gates, James W. (See John W. Perry, assignor.) Gating, Richard J..... | Tire, upsetting, machine for..... | Jan. 6, 1857..... | II. |
| 16476 | Gatzman, Isaac. (See Monnier, Alfred, assignor.) Gatzman, Isaac, assignor to himself and J. & D. E. Breinig..... | Fallowing land, machines for..... | Jan. 27, 1857..... | I. |
| 18794 | Gault, John, and Joshua Gray. (See Joshua Gray, assignor.) Gaylord, E. L..... | Paint, vehicle..... | Dec. 1, 1857..... | IV |
| 18011 | Gaylord, E. L..... | Metal plates, machine for bending..... | Aug. 18, 1857..... | II. |
| 18542 | Gaylord, E. L..... | Metal plates, machine for bending..... | Nov. 3, 1857..... | II. |
| 16366 | Gedney, G. W. B..... | Pumps..... | Jan. 6, 1857..... | XI. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|-------------------------------------|----------------------|------------|
| 494 | Gee, William V., assignor to the Atwater and Bristol Manufacturing Company, assignors to the Nashawannock Manufacturing Company. | Looms | Sept. 15, 1857 | Reisau. |
| 420 | Geinendorff, G. W. and J. C. | Axle-box rollers | Jan. 13, 1857 | Reisau. I. |
| 18735 | Geiss, Jacob, and Jacob Brosius | Seeding-machines | Dec. 1, 1857 | XIX. |
| 16477 | Genhart, Heinrich | Fire-arms, repeating | Jan. 27, 1857 | |
| | Genzsch, L., and Stockton L. Evans. (See Evans and Genzsch) | | | |
| 18331 | George, A. M. | Huskery, corn | Oct. 6, 1857 | I. |
| | George, A. M., and E. W. Scott (See Scott and George.) | | | |
| | Gerhard, S., and W. Fields. (See Fields and Gerhard.) | | | |
| 18332 | Gerriah, Harlan P. | Husker, corn | Oct. 6, 1857 | I. |
| 16855 | Gerner, Ernest | Cloth, napping, gig-mills for | Feb. 24, 1857 | III. |
| 18044 | Getty, Henry | Berths, ships | Aug. 25, 1857 | VII. |
| 18091 | Getty, Henry | Faucets, device for locking | Sept. 1, 1857 | XI. |
| 18241 | Gibbs, Edmund | Steam-heating apparatus | Sept. 22, 1857 | V. |
| 16434 | Gibbs, James E. A. | Sewing-machines | Jan. 20, 1857 | III. |
| 16642 | Gibbs, James E. A. | Bench-clamp, carpenters' | Feb. 17, 1857 | XIV. |
| 16914 | Gibbs, James E. A. | Sewing-machines | Mar. 31, 1857 | III. |
| 17427 | Gibbs, James E. A. | Sewing-machines | June 2, 1857 | III. |
| 18739 | Gibbs, Joshua | Cultivators | Dec. 1, 1857 | I. |
| 495 | Gibbs, S. W. | Stoves | June 16, 1857 | Design. |
| 599 | Gibbs, S. W., assignor to North, Chase, & North | Stoves, cooking | June 23, 1857 | Design. |
| 908 | Gibbs, S. W., assignor to Rathbone & Co. (A) | Stoves | July 7, 1857 | Design. |
| 906 | Gibbs, S. W., assignor to Rathbone & Co. (B) | Stoves | July 7, 1857 | Design. |
| 907 | Gibbs, S. W., assignor to Rathbone & Co. (D) | Stoves | July 7, 1857 | Design. |
| 912 | Gibbs, S. W., assignor to Rathbone & Co. (C) | Stoves | July 7, 1857 | Design. |
| 913 | Gibbs, S. W., assignor to Rathbone & Co. (E) | Stoves | July 14, 1857 | Design. |
| 911 | Gibbs, S. W., assignor to Winne & Abael | Stoves, sad-iron | Sept. 8, 1857 | Design. |
| 921 | Gibbs, S. W., assignor to Young & Brother | Stoves | Aug. 4, 1857 | Design. |

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|-------|--|---|---------------------|-------------|
| 18609 | Gibbs, Volney, and Rockwell Hazen. (See Hazen & Gibbs.) | Life-preservers..... | Dec. 8, 1857..... | VII |
| 18149 | Gibson, Abram J..... | Lamps, vapor..... | Sept. 8, 1857..... | V. |
| 18949 | Gibson, William L. (See Stevens, Lafayette) | Wagons, loading logs on, apparatus for..... | Sept. 29, 1857..... | X. |
| 16374 | Gibson, William L. (See Stevens, Lafayette, assignor.) | Pumps, rotary..... | April 7, 1857..... | XI. |
| 16330 | Giles, Alonzo M..... | Gas-generators..... | Mar. 17, 1857..... | IV. |
| 16426 | Gill, Ira, assignor to Ira Gill and Elbridge Brown. | Hat-bodies, machinery for forming..... | Jan. 13, 1857..... | III. |
| 17326 | Gill, W. Y..... | Mill-stones, redressing, machines for..... | May 19, 1857..... | XIII. |
| 18333 | Gill, W. Y..... | Planters, seed..... | Oct. 6, 1857..... | I. |
| 18198 | Gillett, George..... | Essels, painters..... | Sept. 15, 1857..... | XVIII. |
| 18354 | Gilman, Jesse..... | Sawing shingles, machine for..... | Oct. 6, 1857..... | XIV. |
| 17065 | Gilmour, George..... | Shackle-blocks, messenger..... | April 21, 1857..... | VII. |
| 16821 | Gilmour, George, assignor to George Gilmour and H. R. Clinkard. | Anchor, second shackle..... | Mar. 10, 1857..... | VII. |
| 17965 | Giltrap, Jesse M..... | Plane-bit, machine for whetting..... | Aug. 11, 1857..... | XIV. |
| 18487 | Gitchell, D. W., and L. W. Badger, assignor to Seamless Garment Manufacturing Company. | Felt-garments, seamless, manufacturing..... | Oct. 20, 1857..... | III. |
| 17541 | Gladwin, Porter A., assignor to himself and Thos. F. Caldicott. | Plane, hand, tonguing and grooving..... | June 9, 1857..... | XIV. |
| 17631 | Glascoc, James B..... | Harrows, rotating..... | July 21, 1857..... | I. |
| 17035 | Gleason, E. P..... | Gas-burners..... | April 14, 1857..... | V. |
| 18740 | Gleason, Edward..... | Castors, bottle, revolving..... | Dec. 1, 1857..... | XVII. |
| 17734 | Glover, Almon B..... | Nuts, tapping, machine for..... | July 7, 1857..... | II. |
| 18741 | Glover, David, and E. Borda. (See Borda & Glover.) | Mill-stones, balance irons for..... | Dec. 7, 1857..... | XIII. |
| 18631 | Glover, Joseph H..... | Hinge..... | Mar. 17, 1857..... | II. |
| 17147 | Goddard, Kingston..... | Ink-stands..... | April 28, 1857..... | XVIII. |
| 179 | Goddard, Kingston..... | Ink-stands..... | Nov. 3, 1857..... | Add. imp't. |
| 18563 | Godfrey, B. D..... | Boots and shoes, water-proof soles and heels for..... | Nov. 10, 1857..... | XVI. |
| 16563 | Godfrey, E. K..... | Razor-strops..... | Feb. 10, 1857..... | XXI. |
| 18012 | Godley, Sidney..... | Stores, cooking..... | Aug. 18, 1857..... | V. |
| 17735 | Going, Stephen..... | Joiner's ploughs, device for securing the stock to the guide rods of..... | July 7, 1857..... | XIV. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|-----------------|--------|
| 18810 | Goldamith, H. | Piano-fortes. | Dec. 8, 1857. | XVIII. |
| 18199 | Gomez, Edwin, and William Mills. | Compositions, safety-fuse. | Sept. 15, 1857. | IV. |
| 17736 | Goodell, Joseph H. | Veneers, machines for straightening. | July 7, 1857. | XIV. |
| 18643 | Goodin, James, Jr. | Iron, smoothing. | Nov. 3, 1857. | XVII. |
| 18013 | Goodman, Charles S. | Skirts, ladies', hoops for. | Aug. 18, 1857. | XXI. |
| | Goodspeed, Sawin, & Minott. (See Sawin, Goodspeed, & Minott.) | | | |
| 16720 | Goodwin, Firman. | Planters, seed. | Mar. 3, 1857. | I. |
| 18682 | Goodwin, Firman. | Fruit-gatherers. | Nov. 10, 1857. | I. |
| | Goodwin, J. W., M. C. Hawkins, and J. Cummings. (See Hawkins, Goodwin, & Cummings.) | | | |
| 18645 | Gordon, George P. | Printing-presses. | Nov. 3, 1857. | XVIII. |
| 17565 | Gordon, George P., and Frederick O. Degener. | Motion for preserving rolling contact, &c. | June 16, 1857. | XIII. |
| 16478 | Gordon, James W. W. | Vaccinating instrument. | Jan. 27, 1857. | XX. |
| 16479 | Gore, David, and Samuel L. Kingston. (See Kingston & Gore.) | Lanceet, spring. | Jan. 27, 1857. | XX. |
| | Gorham, Jackson. | | | |
| 17212 | Gorham, Jackson. | Ploughs, construction of. | May 5, 1857. | I. |
| 18544 | Goss, Charles H., and Heber G. Seekins. (See Seekins & Goss.) | Violin-attachment. | Nov. 3, 1857. | XVIII. |
| | Gould, Smith, & Co. (See Gardner, E. S., assignor.) | | | |
| 18334 | Gould, A. M., and A. Flanders. | Planters, seed. | Oct. 6, 1857. | I. |
| 17273 | Gould, John C. | Nail-plate feeder. | May 12, 1857. | II. |
| 18584 | Gould, Samuel A. | Husker, corn. | Nov. 10, 1857. | I. |
| 16437 | Goulding, John. | Carpet and rugs, double pile, manufacture of. | Jan. 20, 1857. | III. |
| 17966 | Gowdy, J. B., and J. A. Welsh. | Hominy-mills. | Aug. 11, 1857. | XIII. |
| 18447 | Graham, Alden. | Husker, corn. | Oct. 20, 1857. | I. |
| 17876 | Graham, Henry H. | Spark-arresters. | July 28, 1857. | VI. |
| 18738 | Granberg, C. P. | Harvesters, rake for. | Dec. 1, 1857. | I. |
| 18737 | Granger, R. D. | Stoves, cooking. | Dec. 1, 1857. | V. |

| | | | | |
|-------|---|---|----------------|--------|
| 18300 | Grant, John C. | Window-sash, mode of operating. | Sept. 15, 1857 | IX. |
| 16420 | Grant, Robert. | Process for making illuminating gas. | Jan. 27, 1857 | IV. |
| 17967 | Graves, Nathaniel S. | Curtain fixtures. | Aug. 11, 1857 | XVII. |
| 18333 | Gray, Andrew B. (See Kemmish, William, assignor.) | | | |
| 17213 | Gray, Andrew B., and Alexander H. Brown. | Vessels, velocimeters for. | Jan. 6, 1857 | VII. |
| 16832 | Gray, George F., and W.W. Messer. (See Coburn, Francis S.) | | | |
| 18446 | Gray, James A. | Engines, locomotive. | May 5, 1857 | VI. |
| 18689 | Gray, John R. | Piano-forte action. | Mar. 17, 1857 | XVIII. |
| 16566 | Gray, Joseph. | Ploughs, steam. | Oct. 20, 1857 | I. |
| | Gray, Joshua, assignor to Joshua Gray and John Gault. | Ditching, &c., levelling instrument for. | Nov. 24, 1857 | IX. |
| | | Sewing-machines. | Feb. 3, 1857 | III. |
| 17926 | Gray, William H. | Looms, power, let-off motion of. | Aug. 4, 1857 | III. |
| 16332 | Green & Wilson. (See Wilson, James, C. Green and W. Wilson, jr.) | | | |
| 17088 | Green, Charles. | Mortising-machine. | Jan. 6, 1857 | XIV. |
| 16541 | Green, Hatael P. (See Burditt & Green.) | | | |
| 16540 | Green, J. P., and T. Dodenhoff. | Harvesting-machines, automatic rakes for. | April 21, 1857 | I. |
| 18688 | Green, Jacob. | Furnaces, puddling. | Feb. 3, 1857 | II. |
| 17089 | Green, Oliver C. | Drills, seed. | Feb. 3, 1857 | I. |
| 18143 | Greene, J. Durell. | Drills, seed, measuring apparatus of. | Nov. 24, 1857 | I. |
| 18634 | Greene, Joseph D., and Edward Ivens, assignors to Joseph D. Greene. | Planters, hand seed. | April 21, 1857 | I. |
| 17087 | Greenhalgh, James, sr. | Lamps, burners of fluid-burning. | April 21, 1857 | V. |
| | Greenman, James, and P. Deal. (See Deal & Greenman.) | Cartridges for breech loading fire-arms. | Sept. 8, 1857 | XIX. |
| | Greenwood, M., & Co. (See Meyer, Julius, as signor.) | Fire-arms, breech-loading. | Nov. 17, 1857 | XIX. |
| | Greenwood, M., & Co (See Meyer, Julius, as signor.) | Furnaces, air-heating. | Jan. 6, 1857 | V. |
| | | Tea kettles, &c. | April 21, 1857 | XVII. |

Patentees of inventions and designs, 1857.

| No. | Name of Patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 16435 | Greer, D. S., and Jacob Boyer. (See Boyer & Greer.) | Sawing-machine..... | Jan. 20, 1857..... | XIV. |
| 17498 | Gregg, George..... | Potato-diggers..... | June 2, 1857..... | I. |
| 18738 | Gregory, I. W., <i>et al.</i> (See Watson, W. C., assignor.) | Rolling beams, pile for..... | Dec. 1, 1857..... | II. |
| 18897 | Griffin, Isaac..... | Boilers, steam, arrangement of air tubes in fire-boxes of..... | Dec. 22, 1857..... | VI. |
| 17016 | Griffiths, Robert..... | Propellers..... | April 14, 1857..... | VII. |
| 18966 | Griggs, George S..... | Locomotive engine wheels..... | Dec. 29, 1857..... | VI. |
| 18883 | Griggs, George S., assignor to himself and William A. Bullard..... | Furnaces, locomotive..... | Dec. 15, 1857..... | V. |
| 18445 | Grinnell, Benjamin F..... | Wristband-fasteners..... | Oct. 20, 1857..... | XXI. |
| 18635 | Griscom, Powell, and Charles S. Deun..... | Kilns, lime..... | Nov. 17, 1857..... | XV. |
| 16875 | Griawold, George W..... | Pumps, rotary..... | Mar. 24, 1857..... | IX. |
| 430 | Griawold, V. W..... | Photographic pictures, bituminous ground for..... | Feb. 24, 1857..... | Release. |
| 17035 | Gritzner, M. C., assignor to M. J. Gritzner..... | Printing-press, engraved plate..... | April 14, 1857..... | XVIII. |
| 16643 | Gross, A. P..... | Saws, circular, device for allowing, to play laterally, independently of their shafts..... | Feb. 17, 1857..... | XIV. |
| 18636 | Gross, Henry..... | Tables, extension..... | Nov. 17, 1857..... | XVII. |
| 18335 | Grover, Manassah..... | Ploughs..... | Oct. 6, 1857..... | I. |
| 17995 | Grover, Manassah, assignor to himself and H. H. Seely..... | Mills, winnowing..... | Aug. 11, 1857..... | XII. |
| 17370 | Grudcho, Julius, and Selmar Eggers..... | Bomb-lance..... | May 26, 1857..... | XIX. |
| 18448 | Guard, Chauncey H..... | Wheelwright-machine..... | Oct. 20, 1857..... | X. |
| | Guernsey, Samuel B. (See Wilmot, Samuel R.) | | | |
| | Guilet, M. J. A. (See Lippman, Isaac, assignor.) | | | |
| | Guilet, M. J. A. (See De La Peyrouse, L. L. A. Ellae, assignor.) | | | |

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|-------|--|--|---------------------|----------|
| 17787 | Gulle, Ezekiel..... | Rope-machines..... | July 14, 1857..... | III. |
| 465 | Gulon, Peter C..... | Cowl or draught-accelerator for steamers..... | May 26, 1857..... | Release. |
| 17927 | Gumner, Samuel..... | Harvesters..... | Aug. 4, 1857..... | I. |
| 18680 | Gundlach, Philip M..... | Drills, seed..... | Nov. 24, 1857..... | I. |
| 17369 | Gueman, W. D..... | Wagon-couplings..... | May 26, 1857..... | X. |
| 16673 | Gueman, Lewis B., assignor to L. B. Gueman and H. W. and H. Safford..... | Curtain fixtures..... | Feb. 17, 1857..... | XVII. |
| 17693 | Guotine, Francis..... | Engine, &c., steam, vane governor for..... | June 23, 1857..... | VI. |
| 17148 | Haasz, Daniel F..... | Pianos, grand action for..... | April 28, 1857..... | XVIII. |
| 17371 | Hackett, Joseph..... | Stoves, cooking..... | May 26, 1857..... | V. |
| 17570 | Hackman, Henry, jr..... | Traps, animal..... | June 16, 1857..... | XXII. |
| 17037 | Haering, Robert..... | India rubber, vulcanizing..... | April 14, 1857..... | IV. |
| 17214 | Haering, Robert..... | Gutta percha, process for purifying..... | May 5, 1857..... | IV. |
| 16543 | Hagaman, Washington G..... | Hat-bodies, felt, machines for forming..... | Feb. 3, 1857..... | III. |
| 18145 | Haines, Joel..... | Planters, hand seed..... | Sept. 8, 1857..... | I. |
| 18843 | Haines, Joseph C..... | Planters, seed, tubes for..... | Dec. 15, 1857..... | I. |
| 17429 | Haldeman, D..... | Sowing seed broadcast, machines for..... | June 2, 1857..... | I. |
| 16644 | Hale, Moses H., and Samuel Horton..... | Chimney-cowl..... | Feb. 17, 1857..... | V. |
| 17216 | Hale, Robert..... | Belting, India rubber, machine for making..... | May 5, 1857..... | XIII. |
| 17215 | Hale, Robert..... | Locomotives, exhaust of, means for directing..... | May 5, 1857..... | VI. |
| 17675 | Hale, Robert..... | Steam, oily particles held in suspension by, apparatus for separating the..... | June 30, 1857..... | VI. |
| | Hale, Robert. (See Kimball, John, assignor.) | | | |
| | Hall & Sawyer. (See Cox, Samuel A., deceased, assignor.) | | | |
| 17038 | Hall, Alexander..... | Bit, expansion..... | April 14, 1857..... | XIV. |
| 18687 | Hall, David E..... | Cultivators..... | Nov. 10, 1857..... | I. |
| 16542 | Hall, George..... | Sowing seed broadcast, machines for..... | Feb. 3, 1857..... | I. |
| 18967 | Hall, George..... | Sawing shingles, machine for..... | Dec. 29, 1857..... | XIV. |
| 18898 | Hall, George, and John Fordyce..... | Washing-machine..... | Dec. 22, 1857..... | XVII. |
| 18844 | Hall, Harvey..... | Mill, corn and cob..... | Dec. 15, 1857..... | XIII. |
| 18970 | Hall, James..... | Tool for turning journals..... | Dec. 29, 1857..... | II. |
| 16438 | Hall, John B..... | Photographic pictures, treating..... | Jan. 20, 1857..... | XVIII. |
| 17091 | Hall, John M..... | Cultivator, cotton..... | April 21, 1857..... | I. |
| 16919 | Hall, John S..... | Carriage, steam..... | Mar. 31, 1857..... | X. |
| 17430 | Hall, John S..... | Ploughs..... | June 2, 1857..... | I. |
| 17633 | Hall, Jonathan..... | Planing-machines, &c., feed rollers for..... | July 21, 1857..... | XIV. |
| 18393 | Hall, Joseph..... | Planters, seed..... | Oct. 13, 1857..... | I. |
| 18243 | Hall, Joseph L..... | Locks..... | Sept. 22, 1857..... | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------------|--------|
| 18395 | Hall, Joshua E | Barns, stables, &c., apparatus for, for rescuing horses and other stock from fire. | Oct. 13, 1857 | IX. |
| 16481 | Hall, Samuel | Metal sheet, cutting | Jan. 27, 1857 | II. |
| 18811 | Hall, Samuel | Metallic bars, machine for cutting | Oct. 8, 1857 | II. |
| 17928 | Hall, Samuel, and Edward Pays. (See Pays & Hall.) | | | |
| 17928 | Hall, Samuel, and Edward Pays. (See Pays & Hall.) | File-cutting machine | Aug. 4, 1857 | II. |
| 17990 | Halsey, James O | Gas, illuminating, portable, apparatus for generating. | April 21, 1857 | IV. |
| 16951 | Halstead, C. J., and J. Coeyman, assignors to Deckers, Godin, & Halsted. | Gas-regulator | Mar. 31, 1857 | IV. |
| 17181 | Halvorson, Halvor, assignor to himself, E. H. Barker, J. F. Athearu, and William T. Eustis. | Oil, purifying | April 28, 1857 | IV. |
| 16384 | Hamblen, Lewis A | Lamps, locomotive | Jan. 13, 1857 | V. |
| 18637 | Hamblin & Johnson. (See Johnson, Charles H., assignor.) | | | |
| 17624 | Hammer, W. W | Mill, grinding, flour distributing bolt for | Nov. 17, 1857 | XIII. |
| 18201 | Hammer, A | Valvular arrangement for faucets, &c | June 23, 1857 | XI. |
| 17872 | Hammer, Adolph | Breweries, cooler for | Sept. 15, 1857 | IV. |
| 17988 | Hammer, Adolph | Steam boiling apparatus | May 26, 1857 | VI. |
| 17676 | Hammond, Henry D | Brewer's boiler | Aug. 11, 1857 | IV. |
| 18045 | Hammond, William M | Harvesters | June 30, 1857 | I. |
| 17092 | Hampton, Wade W | Washing-machines | Aug. 25, 1857 | XVII. |
| 16975 | Hanchett, James H | Hemp-brakes | Aug. 25, 1857 | XVII. |
| 18449 | Hand, Thomas B | Wheel, current and paddle | April 21, 1857 | III. |
| 18989 | Handcock, Armigel W | Gates, farm, mode of closing | April 7, 1857 | XI. |
| 17952 | Hankey, Anthony, and Francis Stiles, jr., assignors to themselves and Frederick S. Taylor. | Vessels, mooring | Oct. 20, 1857 | IX. |
| 18945 | Hanney, P., & al. (See Smith, Wm. M., assignor.) | Knives, grinding, machine for | Dec. 29, 1857 | VII. |
| | | Sewing and other machines, mechanical movement for | Aug. 4, 1857 | II. |
| | | | Dec. 15, 1857 | III. |

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|-------|---|--|---------------------|---------|
| 18044 | Hansen, Henry..... | Process of making white lead | Sept. 22, 1857..... | IV. |
| 16686 | Hansen, Smith, & Richardson. (See Smith, Han- son, & Richardson.) | Water, supplying the upper stories of houses with, apparatus for. | Feb. 24, 1857..... | XI. |
| 16544 | Hansor, James..... | Gas-generating apparatus..... | Feb. 3, 1857..... | IV. |
| 16391 | Hansor, James..... | Gas-making process | Feb. 10, 1857..... | IV. |
| 17546 | Harbour, R. R..... | Brick-presses | June 9, 1857..... | XV. |
| 17274 | Hardeman, J. L..... | Hemp-brakes | May 12, 1857..... | III. |
| 16338 | Hardeman, John L..... | Hemp-cutting | Nov. 17, 1857..... | III. |
| 18399 | Hardenberg, Jacob E..... | Potato-diggers | Dec. 22, 1857..... | I |
| 18336 | Hardin, A. J..... | Ploughs, hill-side | Oct. 6, 1857..... | I |
| 16335 | Martin, Ansel J..... | Trusses, hernial | Mar. 17, 1857..... | XX. |
| 17431 | Harding, F. G..... | Block for blacking boots and shoes..... | June 2, 1857..... | XXII. |
| 17350 | Harding, Thomas, and J. W. Brokaw, assignors. (See Brokaw & Harding, assignors.) | Mowing-machines | May 19, 1857..... | I |
| 16334 | Hardy, Anson..... | Shears, rotary | Jan. 6, 1857..... | II. |
| 18506 | Hardy, Anson, and George A. Rollins..... | Shears, rotary | Oct. 27, 1857..... | II. |
| 16918 | Harmon, J. W..... | Composition for floor-cloths..... | Mar. 31, 1857..... | IV. |
| 18279 | Harmon, Joseph W..... | Oils, factitious..... | Sept. 29, 1857..... | IV. |
| 16562 | Harnist, Peter..... | Reapers, raking, attachment for | Feb. 10, 1857..... | I |
| 17677 | Harper, S., et al. (See Olendorf, Tripp, & Har- per.) | Saw-mills, adjustable fender-posts for | June 30, 1857..... | XIV. |
| 18639 | Harpold, Henry..... | Sewing-machines | Nov. 17, 1857..... | III. |
| 17997 | Harrington, A. W..... | Time of attendance of workmen, marking-machines for. | Aug. 11, 1857..... | VIII. |
| 886 | Harris, Benjamin, T., assignor to John McKillop.. | Stoves, coal, cooking, No. 1..... | June 23, 1857..... | Design. |
| 897 | Harris, Conrad, and Paul W. Zolner..... | Stoves, wood, parlor, No. 2..... | June 23, 1857..... | Design. |
| 898 | Harris, Conrad, and Paul W. Zolner..... | Stoves, dining-room, No. 3..... | June 23, 1857..... | Design. |
| 17508 | Harris, Conrad, and Paul W. Zolner..... | Sewing-machines..... | June 9, 1857..... | III. |
| 17571 | Harris, Daniel..... | Sewing-machines..... | June 16, 1857..... | III. |
| 17553 | Harris, Daniel..... | Pocket-knives, safety..... | June 16, 1857..... | XXI. |
| 17877 | Harris, Horace..... | Mop-heads | June 28, 1857..... | XVII. |
| 17678 | Harris, James S..... | Harvesting-machines | July 30, 1857..... | I |
| 18337 | Harris, John K..... | Curry-combs | Oct. 6, 1857..... | II. |
| 17572 | Harris, Norman, and Alonso Butler..... | Rudders | June 16, 1857..... | VII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------|----------|
| 16483 | Harrison, James, jr. | Springs, coiled, machine for making | Jan. 27, 1857 | II. |
| 17217 | Harrison, James, jr. | Pumps, chain | May 5, 1857 | XI. |
| 18144 | Harrison, Richard B. | Railroads, cross-ties of, machine for ramming under the | Sept. 8, 1857 | IX. |
| 17625 | Harrison, William H. | Pumps | June 23, 1857 | XI. |
| 17823 | Harrison, William H. | Saws, two circular, mode of cutting tenons by, oblique to shaft. | July 14, 1857 | XIV. |
| 18092 | Harrop & Babcock. (See Babcock, Darius, assignor) | | | |
| 18743 | Hart, George | Traps, animal | Sept. 1, 1857 | XXII. |
| 16920 | Hart, George W. | Car, dumping | Dec. 1, 1857 | X. |
| 18971 | Hart, R. | Hinge | March 31, 1857 | II. |
| 17834 | Hart, Wm. | Tongs, blacksmiths' | Dec. 29, 1857 | II. |
| 17876 | Hartnett, John M. | Locomotives, coal-burning, arrangement of means for regulating the fires of. | July 21, 1857 | VI. |
| | Haseltine, George. | Metals, punching and sharpening, machine for. | July 28, 1857 | II. |
| 16917 | Hasell & Whipple. (See Hutchinson, James, assignor.) | | | |
| 17567 | Hasell, Alanson and William P. | Shoe-lasts, machine for manufacturing | March 31, 1857 | XVI. |
| 18846 | Hasell, Joseph. | Lamps, solar | June 9, 1857 | V. |
| | Hasler, J. J. S. | Planters, corn. | Dec. 15, 1857 | I. |
| 18968 | Haswell, Livingston, & Root. (See Carny, N. B.) | | | |
| 17737 | Hatch, Royal. | Bedsteads, spring bottom for | Dec. 29, 1857 | XVII. |
| 17806 | Hathaway, John H. | Wrench | July 7, 1857 | II. |
| | Hausknecht, Gustavus L. | Carrage-brakes | June 9, 1857 | X. |
| 16584 | Havell, Henry | Carrages, running-gear of | March 17, 1857 | Reissue. |
| 18278 | Havens, Robert T. | Hoes, mode of attaching the eyes to the blades of. | Feb. 10, 1857 | I. |
| 18093 | Haviland, James | Roofing cements, preparing | Sept. 29, 1857 | IX. |
| | | Harvesting-machines, method of operating the cutters of. | Sept. 1, 1857 | I. |
| 17696 | Havner, J. W. (See Richardson, T. M., assignor) | | | |
| | Haw, John. | Sawing machines, picker. | June 23, 1857 | XIV. |

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|-------|--|---|----------------|----------|
| 18912 | Hawkes, Charles W. | Printing-press | Dec. 8, 1857 | XVIII. |
| 18901 | Hawkins, Ezekiel C. | Photographs and other pictures, mode of treating | Dec. 22, 1857 | XVIII. |
| 17893 | Hawkins, Henry J. | Lubricator | July 14, 1857 | XII. |
| 18847 | Hawkins, Moses C, Jacob W. Goodwin, and James Cummings. | Valve-cock, spring | Dec. 15, 1857 | VI. |
| 18900 | Hawley, A. W. | Cultivators | Dec. 22, 1857 | I. |
| 17832 | Haworth, G. D. | Harvesters, corn | July 21, 1857 | I. |
| 16834 | Haworth, Wade H. | Collars, horse, machines for stiffening | March 17, 1857 | XVI. |
| 16833 | Hayden, Isaac | Cotton, wool, fur, and other fibrous materials, cleaning and separating, machinery for. | March 17, 1857 | III. |
| 17929 | Hayden, Isaac | Robbins for roving and stubbing | Aug. 4, 1857 | III. |
| 18743 | Hayden, Isaac | Cotton, cleaning, long trunks for | Dec. 1, 1857 | III. |
| 17574 | Hayes, Augustus A. | Gas-generators, construction of | June 16, 1857 | IV. |
| 16482 | Hayes, George E. | Teeth, artificial | Jan. 27, 1857 | XX. |
| 18848 | Hayward, Nelson | Millstones, dresses of | Dec. 15, 1857 | XIII. |
| 17275 | Hazelton, John | Planters, seed | May 12, 1857 | I. |
| 17738 | Hazen, Rockwell, and Volney Gibbs | Tire, upsetting | July 7, 1857 | II. |
| 16795 | Hearn, George W. | Saw-mill dogs, method of operating | March 10, 1857 | XIV. |
| 18280 | Heaton, John D. | Hydraulic engine | Sept. 29, 1857 | XI. |
| 18546 | Hebbard, Alonzo | Pitchers, water-cooling | Nov. 3, 1857 | XVII. |
| 16439 | Heberling, George | Grain-separators | Jan. 20, 1857 | XIII. |
| 18723 | Hecker, John, and William Hotine, assignors to John Hecker. | Dough, kneading, machine for feeding the flour, mixing the materials, and. | Nov. 24, 1857 | XVII. |
| 435 | Hedden, J. T., and Henry Burt. (See Burt & Hedden.) | Saw-mills | March 10, 1857 | Release. |
| 18396 | Hedge, Lemuel, assignor to George W. Hedge, assignor to W. P. Wood and Samuel DeVaughan. | Huskors, corn | Oct. 13, 1857 | I. |
| 18849 | Heick, John B. | Egg-beaters | Dec. 15, 1857 | XVII. |
| 17857 | Heilmann, J., assignor to Ignatius Sturm | Pine, diaper | July 21, 1857 | XXI. |
| 507 | Heilmann, J., assignor to Ignatius Sturm | Diaper-pin | Nov. 10, 1857 | Release. |
| 18691 | Heintzelman, Samuel P. | Horses, &c. across rivers, method of floating | Nov. 24, 1857 | XXII. |
| 17878 | Heistand, C. J. | Mortising-chisel | July 28, 1857 | XIV. |
| | Held, L., and C. Poppenhusen. (See Poppenhusen & Held.) | | | |
| 17931 | Held, Ludwig | Ivory, facitious | Aug. 4, 1857 | IV. |
| 17039 | Hemington, James | Furnaces, feeding fuel to, apparatus for | April 14, 1857 | V. |
| 16645 | Hendryx, Isaiah J. | Air-blast, generating, method of | Feb. 17, 1857 | XI. |
| 18507 | Henley, William | Water-wheel | Oct. 27, 1857 | XI. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|----------|
| 16483 | Harrison, James, jr..... | Springs, coiled, machine for making..... | Jan. 27, 1857..... | II. |
| 17217 | Harrison, James, jr..... | Pumps, chain..... | May 5, 1857..... | XI. |
| 18144 | Harrison, Richard B..... | Railroads, cross-ties of, machine for ramming under the..... | Sept. 8, 1857..... | IX. |
| 17625 | Harrison, William H..... | Pumps..... | June 23, 1857..... | XI. |
| 17823 | Harrison, William H..... | Saws, two circular, mode of cutting tenons by, oblique to shaft..... | July 14, 1857..... | XIV. |
| | Harrop & Babcock. (See Babcock, Darius, assignor.) | | | |
| 18092 | Hart, George..... | Traps, animal..... | Sept. 1, 1857..... | XXII. |
| 18743 | Hart, George W..... | Car, dumping..... | Dec. 1, 1857..... | X. |
| 16920 | Hart, R..... | Hinge..... | March 31, 1857..... | II. |
| 8971 | Hart, Wm..... | Tongs, blacksmiths'..... | Dec. 29, 1857..... | II. |
| 34 | Harnett, John M..... | Locomotives, coal-burning, arrangement of means for regulating the fires of..... | July 21, 1857..... | VI. |
| | Haseltine, George..... | Metals, punching and sharpening, machine for..... | July 28, 1857..... | II. |
| | Tackell & Whipple. (See Hutchinson, James, assignor.) | | | |
| | elli, Alanson and William P..... | Shoe-last, machine for manufacturing..... | March 31, 1857..... | XVI. |
| | l', Joseph..... | Lamps, solar..... | June 9, 1857..... | V. |
| | J. J. S..... | Planters, corn..... | Dec. 15, 1857..... | I. |
| | Livingston, & Root. (See Carny, N. B.) | | | |
| | val..... | Bedsteads, spring bottom for..... | Dec. 29, 1857..... | XVII. |
| | John H..... | Wrench..... | July 7, 1857..... | II. |
| | orge..... | Carriage-brakes..... | June 9, 1857..... | X. |
| | lit, Gustavus L..... | Carriages, running-gear of..... | March 17, 1857..... | Reissue. |
| | ury..... | Hoes, mode of attaching the eyes to the blades of..... | Feb. 10, 1857..... | I. |
| | obert T..... | Roofing cements, preparing..... | Sept. 29, 1857..... | IX. |
| | James..... | Harvesting-machines, method of operating the cutters of..... | Sept. 1, 1857..... | I. |
| | J. W. (See Richardson, T. M., assignor) | | | |
| | John..... | Sawing machines, picker..... | June 23, 1857..... | XIV. |

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| Prindig-press | Dec. 8, 1857 | XVIII. |
| Photographs and other pictures, mode of treating | Dec. 22, 1857 | XVIII. |
| Lubricator | July 14, 1857 | XII. |
| Valve-cock, spring | Dec. 15, 1857 | VI. |
| Cultivators | Dec. 22, 1857 | I. |
| Harvesters, corn | July 21, 1857 | XVI. |
| Collars, horse, machines for stiffening | March 17, 1857 | III. |
| Cotton, wool, fur, and other fibrous materials, cleaning and separating, machinery for | Aug. 4, 1857 | II. |
| Robbins for roving and stubbing | Dec. 1, 1857 | III. |
| Cotton, cleaning, long trunks for | June 16, 1857 | IV. |
| Gas-generators, construction of | Jan. 27, 1857 | XX. |
| Teeth, artificial | Dec. 15, 1857 | XIII. |
| Millstones, dress of | May 12, 1857 | I. |
| Planters, seed | July 7, 1857 | II. |
| Tire, upsetting | March 10, 1857 | XIV. |
| Saw-mill dogs, method of operating | Sept. 29, 1857 | XI. |
| Hydraulic engine | Nov. 3, 1857 | XVII. |
| Pitchers, water-cooling | Jan. 20, 1857 | XIII. |
| Grain-separators | Nov. 24, 1857 | XVII. |
| Dough, kneading, machine for feeding the flour, mixing the materials, and | March 10, 1857 | Reissue. |
| Saw-mills | Oct. 13, 1857 | I. |
| Huakers, corn | Dec. 15, 1857 | XVII. |
| Egg-beaters | July 21, 1857 | XXI. |
| Pins, diaper | Nov. 10, 1857 | Reissue. |
| Diaper-pin | Nov. 24, 1857 | XXII. |
| Horses, &c., across rivers, method of floating | July 28, 1857 | XIV. |
| Mortising-chisel | Aug. 4, 1857 | IV. |
| Ivory, factitious | April 14, 1857 | V. |
| Furnaces, feeding fuel to, apparatus for | Feb. 17, 1857 | XI. |
| Air-blast, generating, method of | Oct. 27, 1857 | XI. |
| Water-wheel | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery | Date. | Class. |
|-------|---|---|---------------------|------------|
| 17856 | Henlings, Joseph, assignor to himself, W. H. Law-son, and B. M. Henlings. | Potatoes, machines for digging..... | July 21, 1857..... | I. |
| 18440 | Henry, E. T..... | Die for making spikes..... | Jan. 20, 1857..... | II. |
| 18972 | Henry, James T., and W. P. Campbell..... | Closets, water..... | Dec. 29, 1857..... | IX. |
| 18744 | Henry, John..... | Printing-press..... | Dec. 1, 1857..... | XVIII. |
| 16796 | Henwood, John..... | Lubricators for steam-engine cylinders..... | Mar. 10, 1857..... | XII. |
| | Herbold, J., George Kuhn, and J. Foster. (See Foster, Junius, assignor.) | | | |
| | Herbold, J., George Kuhn, and J. Foster. (See Foster, Junius, assignor.) | | | |
| | Herendeen, Robinson, & Sheldon. (See Robin-son, Herendeen, & Sheldon.) | | | |
| 18245 | Hermann, Isaac..... | Bracelets, &c., safety-clasp for..... | Sept. 22, 1857..... | XVIII. |
| 18973 | Herper, Ferdinand J..... | Balance for detecting counterfeit money..... | Dec. 29, 1857..... | XII. |
| 18094 | Herring, Edward..... | Stills, spirit..... | Sept. 1, 1857..... | IV. |
| 17930 | Herron, Abial C..... | Sewing-machines..... | Aug. 4, 1857..... | III. |
| 18586 | Hersae, William..... | Mattresses, chairs, &c., springs for..... | Nov. 10, 1857..... | XVII. |
| | Hersey, Ira. (See Dorr, Hersey & Oldfield.) | | | |
| 17505 | Hersey, Ira, and James H. Van Riper..... | Clay-pulverizers..... | June 9, 1857..... | XV. |
| 17218 | Hett, Andrew..... | Violin attachment..... | May 5, 1857..... | XVIII. |
| 16921 | Heulings, Abram..... | Harvesters, corn..... | Mar. 31, 1857..... | I. |
| 17387 | Hewit, Silas..... | Pumps..... | May 19, 1857..... | XL |
| 17790 | Hewitt, Silas..... | Churns..... | July 21, 1857..... | I. |
| | Hewitt, Samuel..... | Hay-press..... | Dec. 14, 1857..... | Extension. |
| 17398 | Heyser, John H., and Edward M. Mobley..... | Harvesters, grain and grass..... | May 19, 1857..... | I. |
| 17373 | Heywood, Bennett Johns..... | Ink-stands..... | May 26, 1857..... | XVIII. |
| 17855 | Hibbard, Harmon..... | Skins and furs, tawing and coloring..... | Aug. 4, 1857..... | IV. |
| 17276 | Hibsch, George..... | Propeller-blades..... | May 12, 1857..... | VII. |
| 18902 | Hickok, Samuel..... | Bedstead-stands..... | Dec. 22, 1857..... | XVII. |
| 16587 | Hicks, Charles..... | Caps, percussion, machine for ramming..... | Feb. 10, 1857..... | XIX. |
| 16646 | Hicks, Charles..... | Caps, percussion, machine for varnishing..... | Feb. 17, 1857..... | XIX. |

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| 16797 | Hicks, William Cleveland..... | Fire-arms, breech-loading, nipples for discharging or withdrawing cartridges from..... | Mar. 10, 1857..... | XIX. |
| 16890 | Hildebrand, John..... | Planters, seed..... | Feb. 10, 1857..... | I. |
| 16897 | Hill, B. L., & Co., assignees of H. N. Dewey, assignor..... | Ploughs, gang..... | Oct. 13, 1857..... | I. |
| 16893 | Hill, Benjamin B..... | Bit-holder..... | Sept. 29, 1857..... | XIV. |
| 17040 | Hill, Levi L..... | Metals, coating, with silver..... | April 14, 1857..... | II. |
| 16146 | Hill, Luther, & al. (See Tripp, Seth D., assignor.) | Straw-cutters..... | Sept. 8, 1857..... | I. |
| 16892 | Hill, Porter, and Charles E. Jones..... | Arithmometer..... | Nov. 24, 1857..... | VIII. |
| 18040 | Hinckley, Charles H..... | Trunks, mail-bags, &c., method of rendering the mouths of, water-tight..... | Aug. 26, 1857..... | XVI. |
| 18281 | Hinckley, Charles H..... | Coating hose-pipe..... | Sept. 29, 1857..... | IV. |
| 17569 | Hinckley, D. B., and G. H. Reynolds. (See Reynolds, George H., assignor.) | Bedsteads..... | June 16, 1857..... | XVI. |
| 16847 | Hindermeier, Bernhard, and L. Ganz (See Bernhard, Joseph, assignor.) | Bedsteads, folding..... | Feb. 17, 1857..... | XVII. |
| 17504 | Hinkley, Benjamin..... | Camp-tents, frame for..... | June 9, 1857..... | XX. |
| 19460 | Hinkley, Benjamin..... | Planters, seed..... | Oct. 20, 1857..... | I. |
| 16545 | Hinman & Fournier, assignors to themselves and Munroe. (See Fournier & Hinman) | Stone, dressing and polishing, machines for..... | Feb. 3, 1857..... | XV. |
| 17349 | Hinman, David, and F. B. Fournier, assignors to themselves and R. J. Parker..... | Vessels, speed of, apparatus for indicating the, and depth of water..... | May 19, 1857..... | VII. |
| 16568 | Hintz, John C..... | Turning spiral forms, machine for..... | Nov. 10, 1857..... | XIV. |
| 18745 | Hintz, John C..... | Sawing bevelled curves, machine for..... | Dec. 1, 1857..... | XIV. |
| 18693 | Hitchings, A. E..... | Boilers for heating buildings..... | Nov. 24, 1857..... | V. |
| 17093 | Hosagland, A..... | Hydrant..... | April 21, 1857..... | XI. |
| 17835 | Hosagland, A..... | Sewing-machines, tension apparatus for..... | July 21, 1857..... | III. |
| 17788 | Hosagland, George H..... | Engines, steam, pistons for setting out the packing of..... | July 14, 1857..... | VI. |
| 17836 | Hosagland, George H..... | Bells, signal or alarm..... | July 21, 1857..... | XXII. |
| 16687 | Hoar, John W..... | Slates, making..... | Feb. 24, 1857..... | XV. |
| | Hobart, Anson, & al. (See Washburn, George J., assignor.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|----------|
| 18447 | Hobson, William, and J. W. Baltzly. (See Baltzly & Hobson.) | Telegraph-bells, attaching wire to..... | Sept. 8, 1857..... | VIII. |
| 16385 | Hochstrasser, Henry | Brick-machines | Jan. 13, 1857..... | XV. |
| 17374 | Hedge, Samuel F. | Ore-crushing machine..... | May 26, 1857..... | II. |
| 17219 | Hodges, David | Tonnaging, adjustable bed and gauge to regulate..... | May 5, 1857..... | XIV. |
| | Hodges, Edward F., and W. P. Page. (See Campbell, Ethan, assignor.) | | | |
| 17149 | Hodgkinson, George, and Theodore F. Randolph | Books, blank, machine for cutting indexes to..... | April 28, 1857..... | XVIII. |
| 16799 | Hodgson, Thomas | Stone, fire-proof..... | Mar. 10, 1857..... | XV. |
| 462 | Hoe, Richard M. | Metallic surfaces, particularly saw-plates, machinery for grinding and polishing. | May 5, 1857..... | Release. |
| 18589 | Hoe, Richard M. | Printing-presses, feeding paper to..... | Nov. 10, 1857..... | XVIII. |
| 18640 | Hoe, Richard M. | Printing-presses, fly-frames of, mode of operating..... | Nov. 17, 1857..... | XVIII. |
| 18338 | Hoffman, Henry | Bronzing liquids..... | Oct. 6, 1857..... | IV. |
| 17932 | Hofner, Peter | Screws, cutting..... | Aug. 4, 1857..... | II. |
| 16866 | Hogle, Sidney S. | Harrows..... | Mar. 17, 1857..... | I. |
| 18974 | Hoke, Jacob | Timber, hewing, guide-gauge for..... | Dec. 29, 1857..... | XIV. |
| 17150 | Holbrook, Amos, and Henry D. Flak | Locks, chronometric..... | April 28, 1857..... | II. |
| 17933 | Holbrook, Peter | Sugar-bollers..... | Aug. 4, 1857..... | IV. |
| 16798 | Holley, George W. | Iron, cast, enamelling..... | Mar. 10, 1857..... | II. |
| 16836 | Holloway, Cornelius, assignor to James D. Maney. | Harvesters..... | May 17, 1857..... | I. |
| 17380 | Holly, Birdsell, assignor to Silaby, Mynderse, & Shoemaker. | Pumps..... | July 14, 1857..... | XI. |
| 17568 | Holly, S. T. | Planters, seed..... | June 16, 1857..... | I. |
| 499 | Holly, Solomon T. | Planters, seed..... | Sept. 22, 1857..... | Release. |
| 17329 | Holmes, Edward, & Britain | Washboards, machine for making..... | May 19, 1857..... | XIV. |
| 18398 | Holmes, Edward, & Britain | Ditching-machines..... | Oct. 13, 1857..... | IX. |
| 16633 | Holmes, Ezra S. | Husking corn, machine for..... | Feb. 10, 1857..... | I. |
| 17567 | Holmes, James G. | Chairs for invalids..... | June 16, 1857..... | XVII. |
| 16774 | Holmes, John B., assignor to John R. Pratt..... | Captains, ships'..... | Mar. 3, 1857..... | VII. |
| 16773 | Holmes, John B., assignor to John R. Pratt..... | Ship's steering apparatus..... | Mar. 3, 1857..... | VII. |

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| 17183 | Holmes, John B., assignor to John B. Holmes and John R. Pratt | Anchor-trippers..... | April 28, 1857..... | VII. |
| 18095 | Holmes, Richard C..... | Boats, surf and life..... | Sept. 17, 1857..... | VII. |
| 16731 | Holt, Horace..... | Stamp, hand..... | Mar. 3, 1857..... | XVIII. |
| 16837 | Holt, Horace..... | Printing-presses..... | Mar. 17, 1857..... | XVIII. |
| 18451 | Hood, Bold R..... | Carriage-springs..... | Oct. 20, 1857..... | X. |
| 17986 | Hood, John M. (See Seely, Samuel J., assignor.) Hooper & Ballou (See Ballou & Hooper.) Hooper, Benjamin F., assignor to himself and Ransom Ballou, jr. | Shearing and punching, press for..... | Aug. 11, 1857..... | II. |
| 17304 | Hope, John D., assignor to G. A. Gardner..... | Drills, rock..... | May 12, 1857..... | IX. |
| 15641 | Hopkins, J. R., assignor to himself and Gustavus F. Sargent. | Steamers, pilot-bells on, mechanism for operating..... | Nov. 17, 1857..... | VI. |
| 476 | Hopkins, Lansing E., assignor to James S. Taylor, Hiram L. Sturdevant, and Elijah Sturdevant. | Hat-bodies, machines for manufacturing..... | June 30, 1857..... | Reissue. |
| 18023 | Horsford, E. N..... | Treating cotton and linen waste..... | Sept. 15, 1857..... | IV. |
| 16877 | Hortman, William J..... | Fringes, cutting, machine for..... | April 7, 1857..... | III. |
| | Horton, H. B., and F. Thrasher. (See Thrasher & Horton) | | | |
| | Horton, Henry B., and Francis Thrasher. (See Thrasher & Horton.) | | | |
| | Horton, James, & al. (See Steffe, Horton, & Currie.) | | | |
| | Horton, Samuel, and Moses H. Hale. (See Hale & Horton.) | | | |
| 18339 | Horton, Steffe, & Currie, assignors to Church. (See Steffe, Horton, & Currie, assignors.) | Rakes..... | Oct. 6, 1857..... | I. |
| 18903 | Hotchkie, A. A. and A..... | Snow-plough, railroad..... | Dec. 22, 1857..... | X. |
| 17248 | Hotchkie, Andrew..... | Brick-machines..... | May 5, 1857..... | XV. |
| | Hotchkie, James, and William H. Schofield, assignors to themselves and William E. Kling. Hotine, William, and John Hecker, assignors. (See Hecker & Hotine, assignors.) | | | |
| 16839 | Hough, Alman V., and Richard W. Jones..... | Brick-machines..... | Mar. 17, 1857..... | XV. |
| 17094 | Houghton, H..... | Carding-machines..... | April 21, 1857..... | III. |
| 16585 | Houghton, Thomas B..... | Planters, seed..... | Feb. 10, 1857..... | I. |
| | Houlton, William, Jr., and H. D. Mears. (See Mears & Houlton.) | | | |
| | Houlton, William, Jr., and H. D. Mears. (See Mears & Houlton.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|----------|
| 16396 | House, Royal E..... | Gates, device by which persons approaching may open | Jan. 13, 1857..... | IX. |
| 16947 | Houston, William H..... | Type, composing and distributing, machine for..... | Mar. 31, 1857..... | XVIII. |
| 18283 | Howard, Charles A..... | Gate, approach-opening..... | Sept. 28, 1857..... | IX. |
| 17837 | Howard, George C..... | Shovel, spade, or dung-fork handles..... | July 21, 1857..... | I. |
| 868 | Howard, James L..... | Stoves, railroad car..... | Jan. 27, 1857..... | Design. |
| 16589 | Howard, Lewis P..... | Paddle-wheels, feathering..... | Feb. 10, 1857..... | VII. |
| 18202 | Howard, Lewis P..... | Paddle-wheels, feathering..... | Sept. 15, 1857..... | VII. |
| 17375 | Howard, William H..... | Looms..... | May 26, 1857..... | III. |
| 16838 | Howarth, John..... | Fibrous materials, method of cleansing..... | Mar. 17, 1857..... | III. |
| 17679 | Howe, E., jr., and W. R. Bliss..... | Sewing-machines..... | June 30, 1857..... | III. |
| 16436 | Howe, Elias jr..... | Sewing-machines..... | Jan. 20, 1857..... | III. |
| 17879 | Howe, F. W..... | Engines, &c., governor for..... | July 28, 1857..... | VI. |
| 18453 | Howe, George..... | Piano-forte action..... | Oct. 20, 1857..... | XVIII. |
| 18340 | Howell, Charles..... | Reaping and mowing machines, guard-finger for..... | Oct. 6, 1857..... | I. |
| 18452 | Howell, David..... | Bending flanges on boiler-heads, machine for..... | Oct. 20, 1857..... | II. |
| 17330 | Howell, Edward..... | Photographs from glass to paper, process for re-moving..... | May 19, 1857..... | XVIII. |
| 500 | Howell, Edward..... | Photographs from glass to paper, process for re-moving..... | Sept. 22, 1857..... | Reissue. |
| 17041 | Howell, J. R..... | Water-wheels, adjustable buckets to the shafts of, method of attaching..... | April 14, 1857..... | XI. |
| 18904 | Hoyt, Henry T., & al. (See Williams, Thomas W., assignor.) | Sewing-machines..... | Dec. 22, 1857..... | III. |
| 17376 | Hubbard, George W..... | Carriage, horse and shafts from a, apparatus for discharging a..... | May 26, 1857..... | X. |
| 16517 | Hubbard, Guy H, deceased, Clarissa A. Hubbard, administratrix of..... | Apples, paring and slicing, machines for..... | Jan. 27, 1857..... | XVII. |
| 16442 | Hubbard, M. G..... | Harvesters, cutters for..... | Jan. 20, 1857..... | I. |
| 16441 | Hubbard, M. G..... | Harvesters..... | Jan. 20, 1857..... | I. |
| 426 | Hubbard, M. G..... | Reapers, raking-attachment for..... | Feb. 3, 1857..... | Reissue. |
| 16840 | Hubbard, M. G..... | Harvesters..... | Mar. 17, 1857..... | I. |

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| 17151 | Hubbard, M. G. | Harvester-frames | April 28, 1857 | I. |
| 17250 | Hubbard, M. G. (No. 3) | Harvesters | May 12, 1857 | I. |
| 17277 | Hubbard, M. G. (No. 2) | Harvesters | May 12, 1857 | I. |
| 17575 | Hubbard, M. G. | Harvesters, cutting apparatus of | June 16, 1857 | I. |
| 16484 | Hubbard, Moses G. | Harvesters | Jan. 27, 1857 | I. |
| 17606 | Hubbard, Samuel C., assignor to Charles C. Hubbard. | Measures, lineal, machines for graduating | June 16, 1857 | VIII. |
| | Hubbard, W. W. L., and N. L. Bradley. (See Chiquini, Pietro.) | | | |
| | Hubbell, Roberts, & Wood. (See Wood, and Hubbell, & Roberts.) | | | |
| 16546 | Huey, William | Shingle-machine | Feb. 3, 1857 | XIV. |
| 17377 | Huffer, Abraham | Washing-machines | Nov. 26, 1857 | XVII. |
| 18642 | Huffer, Abraham | Washing-machine | Nov. 17, 1857 | XVII. |
| 18284 | Hughes, Amos P. | Musical instruments, reed-stops for | Sept. 29, 1857 | XVIII. |
| 18148 | Hughes, D. W. | Planters, corn | Sept. 8, 1857 | I. |
| 17278 | Hughes, Henry | Presses for cotton, &c. | May 12, 1857 | XII. |
| 16886 | Hull, Addison | Sewing-machines, guide for | Feb. 10, 1857 | III. |
| 17095 | Hall, Alonzo G. | Medicinal agents, means for inhaling | April 21, 1857 | XX. |
| 17789 | Hulekamp, G. Henry | Piano-fortes | July 14, 1857 | XVIII. |
| 17838 | Hulekamp, G. Henry | Piano-fortes, metallic bridge for | July 21, 1857 | XVIII. |
| 18149 | Humaston, J. P. | Telegraphic-signals, transmitting, machines for punching paper filets for. | Sept. 8, 1857 | VIII. |
| 18747 | Humberger, Adam | Harvesters, corn | Dec. 1, 1857 | I. |
| 17576 | Hummell, Peter E. | Leather, scouring and setting, machines for | June 16, 1857 | XVI. |
| 16923 | Humphrey, John | Clothes-pins, slats in, machine for cutting. | Mar. 31, 1857 | XVII. |
| 18268 | Humphrey, John, assignor to himself and Amos E. Perry. | Lathes for manufacture of clothes-pins, &c. | Sept. 22, 1857 | XIV. |
| 17152 | Humphrey, S. Dwight | Photographic pictures, engraving, &c., preparation of. | April 26, 1857 | XVIII. |
| 16978 | Hunt, James G. | Gate-post, attachable to any panel of its corresponding field fence. | April 7, 1857 | IX. |
| 474 | Hunt, James G. | Fence, portable field | June 30, 1857 | Release. |
| 18096 | Hunt, N., et al. (See Niles, Peter H., assignor.) | Harvesters, raking device for | Sept. 1, 1857 | I. |
| | Hunt, Stephen E. | | | |
| | Huntington & Co., Thurston, & Ward. (See Thurston, Stephen, assignor.) | | | |
| | Huntington, Wait T., and Henry Patts. (See Atkins & Burritt, assignors.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|----------------|--------|
| 18395 | Hall, Joshua E. | Barns, stables, &c., apparatus for, for rescuing horses and other stock from fire. | Oct. 13, 1857 | IX. |
| 16481 | Hall, Samuel | Metal, sheet, cutting | Jan. 27, 1857 | II. |
| 18811 | Hall, Samuel | Metallic bars, machine for cutting. | Oct. 8, 1857 | II. |
| 17928 | Hall, Samuel, and Edward Paye. (See Paye & Hall.) | File-cutting machine | Aug. 4, 1857 | II. |
| 17090 | Hall, Samuel, and Levi Osborn | Gas, illuminating, portable, apparatus for generating. | April 21, 1857 | IV. |
| 16951 | Halstead, C. J., and J. Coeyman, assignors to Deckers, Godin, & Halsted. | Gas-regulator | Mar. 31, 1857 | IV. |
| 17181 | Halvorsen, Halvor, assignor to himself, E. H. Barker, J. F. Athearu, and William T. Eustis. | Oil, purifying | April 28, 1857 | IV. |
| 16384 | Hambien, Lewis A. | Lamps, locomotive | Jan. 13, 1857 | V. |
| | Hamblin & Johnson. (See Johnson, Charles H., assignor.) | | | |
| 18637 | Hammer, W. W. | Mill, grinding, flour distributing bolt for | Nov. 17, 1857 | XIII. |
| 17624 | Hamilton, Edward | Valvular arrangement for faucets, &c. | June 23, 1857 | XI. |
| 18201 | Hammer, A. | Breweries, cooler for | Sept. 15, 1857 | IV. |
| 17872 | Hammer, Adolph | Steam boiling apparatus | May 26, 1857 | VI. |
| 17968 | Hammet, Adolph | Brewer's boiler | Aug. 11, 1857 | IV. |
| 17676 | Hammond, Henry D. | Harvesters | June 30, 1857 | I. |
| 18045 | Hammond, William M. | Washing-machines | Aug. 25, 1857 | XVII. |
| 17092 | Hampton, Wade W. | Hemp-brakes | April 21, 1857 | III. |
| 16975 | Hanchett, James H. | Wheel, current and paddle | April 7, 1857 | XI. |
| 18449 | Hand, Thomas B. | Gates, farm, mode of closing | Oct. 20, 1857 | IX. |
| 18969 | Handcock, Armigel W. | Vessels, mooring | Dec. 29, 1857 | VII. |
| 17952 | Hankey, Anthony, and Francis Stiles, jr., assignors to themselves and Frederick S. Taylor. | Knives, grinding, machine for | Aug. 4, 1857 | II. |
| 18846 | Hanley, James | Sewing and other machines, mechanical movement for | Dec. 15, 1857 | III. |
| | Hanney, P., & al. (See Smith, Wm. M., assignor.) | | | |

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| 16044 | Hansen, Henry..... | Process of making white lead | Sept. 22, 1857..... | IV. |
| 16086 | Hansen, Smith, & Richardson. (See Smith, Han- son, & Richardson.) | Water, supplying the upper stories of houses with, apparatus for. | Feb. 24, 1857..... | XI. |
| 16544 | Hansor, James..... | Gas-generating apparatus..... | Feb. 3, 1857..... | IV. |
| 16591 | Hansor, James..... | Gas-making process | Feb. 10, 1857..... | IV. |
| 17546 | Harbour, R. R..... | Brick-presses | June 9, 1857..... | XV. |
| 17574 | Hardeman, J. L..... | Hemp-brakes | May 12, 1857..... | III. |
| 18638 | Hardeman, John L..... | Hemp-cutting | Nov. 17, 1857..... | III. |
| 18639 | Hardenberg, Jacob E..... | Potato-diggers..... | Dec. 22, 1857..... | I. |
| 18636 | Hardin, A. J..... | Ploughs, hill-side | Oct. 6, 1857..... | I. |
| 18636 | Hardin, Ansel J..... | Trusses, herald | Mar. 17, 1857..... | XX. |
| 17431 | Harding, F. G..... | Block for bisecting boots and shoes..... | June 2, 1857..... | XXII. |
| 17350 | Harding, Thomas, and J. W. Brokaw, assignors. (See Brokaw & Harding, assignors.) | Mowing-machines | May 19, 1857..... | I. |
| 16334 | Hardy, Anson..... | Shears, rotary | Jan. 6, 1857..... | II. |
| 18506 | Hardy, Anson, and George A. Rollins..... | Shears, rotary | Oct. 27, 1857..... | II. |
| 16918 | Harmon, J. W..... | Composition for floor-cloths..... | Mar. 31, 1857..... | IV. |
| 18279 | Harmon, Joseph W..... | Oils, facitious..... | Sept. 29, 1857..... | IV. |
| 16582 | Harnise, Peter..... | Reapers, raking, attachment for | Feb. 10, 1857..... | I. |
| 17677 | Harper, S., & al. (See Olendorf, Tripp, & Har- per.) | Saw-mills, adjustable fender-posts for | June 30, 1857..... | XIV. |
| 19639 | Harpold, Henry..... | Sewing-machines | Nov. 17, 1857..... | III. |
| 17997 | Harrington, A. W..... | Time of attendance of workmen, marking-machines for. | Aug. 11, 1857..... | VIII. |
| 886 | Harris, Benjamin, T., assignor to John McKillop..... | Stoves, coal, cooking, No. 1..... | June 23, 1857..... | Design. |
| 897 | Harris, Conrad, and Paul W. Zolner..... | Stoves, wood, parlor, No. 2 | June 23, 1857..... | Design. |
| 898 | Harris, Conrad, and Paul W. Zolner..... | Stoves, dining-room, No. 3 | June 23, 1857..... | Design. |
| 17508 | Harris, Daniel..... | Sewing-machines..... | June 9, 1857..... | III. |
| 17571 | Harris, Daniel..... | Sewing-machines..... | June 16, 1857..... | III. |
| 17553 | Harris, Horace..... | Pocketa, safety..... | June 16, 1857..... | XXI. |
| 17577 | Harris, James S..... | Map-heads | July 28, 1857..... | XVII. |
| 17678 | Harris, John K..... | Harvesting-machines | June 30, 1857..... | I. |
| 18337 | Harris, Norman, and Alonso Butler..... | Curry-combs | Oct. 6, 1857..... | II. |
| 15752 | Harris, R. S..... | Rudders | June 16, 1857..... | VII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 16483 | Harrison, James, jr..... | Springs, coiled, machine for making..... | Jan. 27, 1857..... | II. |
| 17217 | Harrison, James, jr..... | Pumps, chain..... | May 5, 1857..... | XI. |
| 18144 | Harrison, Richard B..... | Railroads, cross-ties of, machine for running under the..... | Sept. 8, 1857..... | IX. |
| 17625 | Harrison, William H..... | Pumps..... | June 23, 1857..... | XI. |
| 17823 | Harrison, William H..... | Saws, two circular, mode of cutting tenons by, oblique to shaft..... | July 14, 1857..... | XIV. |
| 18092 | Harrop & Babcock. (See Babcock, Darius, assignor.) | | | |
| 18743 | Hart, George..... | Traps, animal..... | Sept. 1, 1857..... | XXII. |
| 16320 | Hart, George W..... | Car, dumping..... | Dec. 1, 1857..... | X. |
| 16871 | Hart, R..... | Hinge..... | March 31, 1857..... | II. |
| 18971 | Hart, Wm..... | Tongs, blacksmiths'..... | Dec. 29, 1857..... | II. |
| 17834 | Hartnett, John M..... | Locomotives, coal-burning, arrangement of means for regulating the fires of..... | July 21, 1857..... | VI. |
| 17876 | Haseltine, George..... | Metals, punching and sharpening, machine for..... | July 28, 1857..... | II. |
| 16917 | Haskell, Alanson and William P..... | Shoe-lasts, machine for manufacturing..... | March 31, 1857..... | XVI. |
| 17587 | Hassell, Joseph..... | Lamps, solar..... | June 9, 1857..... | V. |
| 18946 | Hassler, J. J. S..... | Planters, corn..... | Dec. 15, 1857..... | I. |
| 18968 | Hatch, Royal..... | Bedsteads, spring bottom for..... | Dec. 29, 1857..... | XVII. |
| 17737 | Hathaway, John H..... | Wrench..... | July 7, 1857..... | II. |
| 17506 | Hauck, George..... | Carriage-brakes..... | June 9, 1857..... | X. |
| 437 | Hausknecht, Gustavus L..... | Carriages, running-gear of..... | March 17, 1857..... | Release. |
| 16584 | Havell, Henry..... | Hoes, mode of attaching the eyes to the blades of..... | Feb. 10, 1857..... | I. |
| 18278 | Havens, Robert T..... | Roofing cements, preparing..... | Sept. 29, 1857..... | IX. |
| 18093 | Haviland, James..... | Harvesting-machines, method of operating the cutters of..... | Sept. 1, 1857..... | I. |
| 17636 | Havner, J. W. (See Richardson, T. M., assignor.) Haw, John..... | Sewing machines, picker..... | June 23, 1857..... | XIV. |

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|-------|--|---|---------------------|----------|
| 18812 | Hawkes, Charles W..... | Printing-press..... | Dec. 8, 1857..... | XVIII. |
| 18901 | Hawkins, Ezekiel C..... | Photographs and other pictures, mode of treating .. | Dec. 22, 1857..... | XVIII. |
| 17983 | Hawkins, Henry J..... | Lubricator..... | July 14, 1857..... | XII. |
| 18847 | Hawkins, Moses C, Jacob W. Goodwin, and James Cummings. | Valve-cock, spring..... | Dec. 15, 1857..... | VI. |
| 18900 | Hawley, A. W..... | Cultivators..... | Dec. 22, 1857..... | I. |
| 17932 | Haworth, G. D..... | Harvesters, corn..... | July 21, 1857..... | I. |
| 16834 | Haworth, Wade H..... | Collars, horse, machines for stiffening..... | March 17, 1857..... | XVI. |
| 16333 | Hayden, Isaac..... | Cotton, wool, fur, and other fibrous materials, cleaning and separating, machinery for. | March 17, 1857..... | III. |
| 17929 | Hayden, Isaac..... | Bobbins for roving and stubbing..... | Aug. 4, 1857..... | III. |
| 18742 | Hayden, Isaac..... | Cotton, cleaning, long trunks for..... | Dec. 1, 1857..... | III. |
| 17574 | Hayes, Augustus A..... | Gas-generators, construction of..... | June 16, 1857..... | IV. |
| 16482 | Hayes, George E..... | Teeth, artificial..... | Jan. 27, 1857..... | XX. |
| 18248 | Hayward, Nelson..... | Millstones, dress of..... | Dec. 15, 1857..... | XIII. |
| 17275 | Hazelton, John..... | Planters, seed..... | May 12, 1857..... | I. |
| 17739 | Hazen, Rockwell, and Volney Gibbs..... | Tire, upsetting..... | July 7, 1857..... | II. |
| 16795 | Hearn, George W..... | Saw-mill dogs, method of operating..... | March 10, 1857..... | XIV. |
| 18280 | Heaton, John D..... | Hydraulic engine..... | Sept. 29, 1857..... | XI. |
| 18546 | Hebbard, Alonzo..... | Pitchers, water-cooling..... | Nov. 3, 1857..... | XVII. |
| 16439 | Heberling, George..... | Grain-separators..... | Jan. 20, 1857..... | XIII. |
| 18723 | Hecker, John, and William Hotine, assignors to John Hecker. | Dough, kneading, machine for feeding the flour, mixing the materials, and. | Nov. 24, 1857..... | XVII. |
| 435 | Hedden, J. T., and Henry Burt. (See Burt & Hedden.) | Saw-mills..... | March 10, 1857..... | Release. |
| 18396 | Hedge, Lemuel, assignor to George W. Hedge, assignor to W. P. Wood and Samuel DeVaughan. | Huskars, corn..... | Oct. 13, 1857..... | I. |
| 18849 | Heick, John B..... | Egg-beaters..... | Dec. 15, 1857..... | XVII. |
| 17857 | Heilmann, J., assignor to Ignatius Sturm..... | Pine, diaper..... | July 21, 1857..... | XXI. |
| 507 | Heilmann, J., assignor to Ignatius Sturm..... | Diaper-pin..... | Nov. 10, 1857..... | Release. |
| 18691 | Heintzelman, Samuel P..... | Horses, &c., across rivers, method of floating..... | Nov. 24, 1857..... | XXII. |
| 17878 | Heistand, C. J..... | Mortising-chisel..... | July 28, 1857..... | XIV. |
| 17931 | Held, L. and C. Poppenhusen. (See Poppenhusen & Held.) | Ivory, facitious..... | Aug. 4, 1857..... | IV. |
| 17039 | Hemington, James..... | Furnaces, feeding fuel to, apparatus for..... | April 14, 1857..... | V. |
| 16645 | Hendryx, Isaiah J..... | Air-blast, generating, method of..... | Feb. 17, 1857..... | XI. |
| 18507 | Henley, William..... | Water-wheel..... | Oct. 27, 1857..... | XI. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery | Date. | Class. |
|-------|---|---|---------------------|------------|
| 17856 | Heulings, Joseph, assignor to himself, W. H. Law-son, and B. M. Heulings. | Potatoes, machines for digging..... | July 21, 1857..... | I. |
| 16440 | Henry, E. T..... | Die for making spikes..... | Jan. 20, 1857..... | II. |
| 18972 | Henry, James T., and W. P. Campbell..... | Closets, water..... | Dec. 29, 1857..... | IX. |
| 18744 | Henry, John..... | Printing-press..... | Dec. 1, 1857..... | XVIII. |
| 16796 | Henwood, John..... (See Foster, Junius, assignor.) | Lubricators for steam-engine cylinders..... | Mar. 10, 1857..... | XII. |
| | Herbold, J., George Kuhn, and J. Foster. (See Foster, Junius, assignor.) | | | |
| | Herendeen, Robinson, & Sheldon. (See Robinson, Herendeen, & Sheldon.) | | | |
| 18245 | Hermann, Isaac..... | Bracelets, &c., safety-clasp for..... | Sept. 22, 1857..... | XVIII. |
| 18973 | Herrera, Ferdinand J..... | Balance for detecting counterfeit money..... | Dec. 29, 1857..... | XII. |
| 18694 | Herring, Edward..... | Stilla, spirit..... | Sept. 1, 1857..... | IV. |
| 17930 | Herron, Abial C..... | Sewing-machines..... | Aug. 4, 1857..... | III. |
| 18585 | Hersce, William..... | Mattresses, chairs, &c., springs for..... | Nov. 10, 1857..... | XVII. |
| | Hersey, Ira. (See Dorr, Hersey, & Oldfield.) | | | |
| 17505 | Hersey, Ira, and James H. Van Riper..... | Clay-pulverizers..... | June 9, 1857..... | XV. |
| 17218 | Hett, Andrew..... | Violin attachment..... | May 5, 1857..... | XVIII. |
| 16921 | Heulings, Abram..... | Harvesters, corn..... | Mar. 31, 1857..... | I. |
| 17327 | Hewit, Silas..... | Pumps..... | May 19, 1857..... | XI. |
| 17790 | Hewit, Silas..... | Churns..... | July 21, 1857..... | I. |
| | Hewitt, Samuel..... | Hay-press..... | Dec. 14, 1857..... | Extension. |
| 17328 | Heyner, John H., and Edward M. Mobley..... | Harvesters, grain and grass..... | May 19, 1857..... | I. |
| 17373 | Heywood, Bennett Johns..... | Ink-stands..... | May 26, 1857..... | XVIII. |
| | Hibbard, Harmon..... | Skins and furs, tawing and coloring..... | Aug. 4, 1857..... | IV. |
| 17276 | Hibsch, George..... | Propeller-blades..... | May 12, 1857..... | VII. |
| 18992 | Hickok, Samuel..... | Bedstead-slats..... | Dec. 22, 1857..... | XVII. |
| 16537 | Hicks, Charles..... | Caps, percussion, machine for ramming..... | Feb. 10, 1857..... | XIX. |
| 16646 | Hicks, Charles..... | Caps, percussion, machine for varnishing..... | Feb. 17, 1857..... | XIX. |

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|-------|--|--|---------------------|-------|
| 16797 | Hicks, William Cleveland..... | Fire-arms, breech-loading, nipples for discharging or withdrawing cartridges from. | Mar. 10, 1857..... | XIX. |
| 16890 | Hildebrand, John..... | Planters, seed..... | Feb. 10, 1857..... | I. |
| 16897 | Hill, B. L., & Co., assignees of H. N. Dewey, assignor. | Ploughs, gang..... | Oct. 13, 1857..... | I. |
| 16932 | Hill, Benjamin B..... | Bit-holder..... | Sept. 29, 1857..... | XIV. |
| 17040 | Hill, Levi L..... | Metals, coating, with silver..... | April 14, 1857..... | II. |
| 18146 | Hill, Luther, & al. (See Tripp, Seth D., assignor.) | Straw-cutters..... | Sept. 8, 1857..... | I. |
| 18692 | Hill, Porter, and Charles E. Jones..... | Arithmometer..... | Nov. 24, 1857..... | VIII. |
| 18040 | Hill, Thomas..... | Trunks, mail-bags, &c., method of rendering the mouths of, water-tight. | Aug. 26, 1857..... | XVI. |
| 18281 | Hinckley, Charles H..... | Coating hose-pipe..... | Sept. 29, 1857..... | IV. |
| 17569 | Hinckley, D. B., and G. H. Reynolds. (See Reynolds, George H., assignor.) | Bedsteads..... | June 16, 1857..... | XVI. |
| 16647 | Hindermeyer, Bernhard, and L. Ganz (See Bernhard, Joseph, assignor.) | Bedsteads, folding..... | Feb. 17, 1857..... | XVII. |
| 17504 | Hinkley, Benjamin..... | Camp-tents, frame for..... | June 9, 1857..... | XX. |
| 18450 | Hinkley, Benjamin..... | Planters, seed..... | Oct. 20, 1857..... | I. |
| 16545 | Hinman & Fourrier, assignors to themselves and Munroe. (See Fourrier & Hinman) | Stone, dressing and polishing, machines for..... | Feb. 3, 1857..... | XV. |
| 17349 | Hinman, David, and F. B. Fourrier, assignors to themselves and R. J. Parker. | Vessels, speed of, apparatus for indicating the, and depth of water. | May 19, 1857..... | VII. |
| 18598 | Hintz, John C..... | Turning spiral forms, machine for..... | Nov. 10, 1857..... | XIV. |
| 18745 | Hintz, John C..... | Sawing bevelled curves, machine for..... | Dec. 1, 1857..... | XIV. |
| 18693 | Hitchings, A. E..... | Boilers for heating buildings..... | Nov. 24, 1857..... | V. |
| 17093 | Hoagland, A..... | Hydrant..... | April 21, 1857..... | XI. |
| 17835 | Hoagland, A..... | Sewing-machines, tension apparatus for..... | July 21, 1857..... | III. |
| 17768 | Hoagland, George H..... | Engines, steam, pistons for setting out the packing of. | July 14, 1857..... | VI. |
| 17836 | Hoagland, George H..... | Bells, signal or alarm..... | July 21, 1857..... | XXII. |
| 16687 | Hobart, John W..... | Slates, making..... | Feb. 24, 1857..... | XV. |
| | Hobart, Anson, & al. (See Washburn, George J., assignor.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|----------|
| 18447 | Hobson, William, and J. W. Baltzly. (See Baltzly & Hobson.) | Telegraph-bells, attaching wire to..... | Sept. 8, 1857..... | VIII. |
| 16325 | Hochrasser, Henry | Brick-machines..... | Jan. 13, 1857..... | XV. |
| 17374 | Hodge, Samuel F. | Ore-crushing machine..... | May 26, 1857..... | II. |
| 17219 | Hodges, David | Tenoning, adjustable bed and gauge to regulate..... | May 5, 1857..... | XIV. |
| 17149 | Hodges, Edward F., and W. P. Page. (See Campbell, Ethan, assignor.) | Books, blank, machine for cutting indexes to..... | April 28, 1857..... | XVIII. |
| 16799 | Hodgkinson, George, and Theodore F. Randolph .. | Stone, fire-proof..... | Mar. 10, 1857..... | XV. |
| 462 | Hodgson, Thomas | Metallic surfaces, particularly saw-plates, machinery for grinding and polishing..... | May 5, 1857..... | Reissue. |
| 18589 | Hoe, Richard M. | Printing-presses, feeding paper to..... | Nov. 10, 1857..... | XVIII. |
| 18640 | Hoe, Richard M. | Printing-presses, fly-frames of, mode of operating..... | Nov. 17, 1857..... | XVIII. |
| 18338 | Hoffman, Henry | Bronzing liquids..... | Oct. 6, 1857..... | IV. |
| 17932 | Hoffner, Peter | Screws, cutting..... | Aug. 4, 1857..... | II. |
| 16866 | Hogle, Sidney S. | Harrows..... | Mar. 17, 1857..... | I. |
| 18974 | Hoke, Jacob | Timber, hewing, guide-gauge for..... | Dec. 29, 1857..... | XIV. |
| 17150 | Holbrook, Amos, and Henry D. Fiat. | Locks, chronometric..... | April 28, 1857..... | II. |
| 17933 | Holbrook, Peter | Sugar-boilers..... | Aug. 4, 1857..... | IV. |
| 16798 | Holley, George W. | Iron, cast, enamelling..... | Mar. 10, 1857..... | II. |
| 16836 | Holloway, Cornelius, assignor to James D. Maney. | Harvesters..... | May 17, 1857..... | I. |
| | Holly, Birdsell, assignor to Silsby, Mynderse, & Shoemaker. | Pumps..... | July 14, 1857..... | XI. |
| 17508 | Holly, S. T. | Planters, seed..... | June 16, 1857..... | I. |
| 499 | Holly, Solomon T. | Planters, seed..... | Sept. 22, 1857..... | Reissue. |
| 17329 | Holmes, Edward, & Britain. | Washboards, machine for making..... | May 19, 1857..... | XIV. |
| 18398 | Holmes, Edward, & Britain. | Ditching-machines..... | Oct. 13, 1857..... | IX. |
| 16433 | Holmes, Ezra S. | Husking corn, machine for..... | Feb. 10, 1857..... | I. |
| 17567 | Holmes, James G. | Chairs for invalids..... | June 16, 1857..... | XVII. |
| 16774 | Holmes, John B., assignor to John R. Pratt. | Capstans, ships..... | Mar. 3, 1857..... | VII. |
| 16773 | Holmes, John B., assignor to John R. Pratt. | Ship's steering apparatus..... | Mar. 3, 1857..... | VII. |

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|-------|---|--|--|--|
| 17183 | Holmes, John B., assignor to John B. Holmes and John R. Pratt | Anchor-trippers..... | April 28, 1857..... | VII. |
| 18095 | Holmes, Richard C..... | Boats, surf and life..... | Sept. 17, 1857..... | VII. |
| 16231 | Holt, Horace..... | Stamp, hand..... | Mar. 3, 1857..... | XVIII. |
| 16837 | Holt, Horace..... | Printing-presses..... | Mar. 17, 1857..... | XVIII. |
| 18451 | Hood, Bold R..... | Carriage-springs..... | Oct. 20, 1857..... | X. |
| 17996 | Hood, John M. (See Seely, Samuel J., assignor.) Hooper & Ballou (See Ballou & Hooper.) Hooper, Benjamin F., assignor to himself and Ransom Ballou, Jr. | Shearing and punching, press for..... | Aug. 11, 1857..... | II. |
| 17304 | Hope, John D., assignor to G. A. Gardner..... | Drills, rock..... | May 12, 1857..... | IX. |
| 18641 | Hopkins, J. R., assignor to himself and Gustavus F. Sargent. | Steamers, pilot-bells on, mechanism for operating..... | Nov. 17, 1857..... | VI. |
| 476 | Hopkins, Lansing E., assignor to James S. Taylor, Hiram L. Sturdevant, and Elijah Sturdevant. | Hat-bodies, machines for manufacturing..... | June 30, 1857..... | Release. |
| 18023 | Horsford, E. N..... | Treading cotton and linen waste..... | Sept. 15, 1857..... | IV. |
| 16977 | Hortman, William J..... | Fringes, cutting, machine for..... | April 7, 1857..... | III. |
| | Horton, H. B., and F. Thrasher. (See Thrasher & Horton.) Horton, Henry B., and Francis Thrasher. (See Thrasher & Horton.) Horton, James, <i>et al.</i> (See Steffe, Horton, & Currie.) Horton, Samuel, and Moses H. Hale. (See Hale & Horton.) Horton, Steffe, & Currie, assignors to Church. (See Steffe, Horton, & Currie, assignors.) Hotchkiss, A. A. and A..... Hotchkiss, Andrew..... Hotchkiss, James, and William H. Schofield, assignors to themselves and William R. King. (See Hecker & Hotchkiss, assignors.) Hough, Alman V., and Richard W. Jones..... Houghton, H..... Houghton, Thomas B..... Houlton, William, jr., and H. D. Mears. (See Mears & Houlton.) Houlton, William, jr., and H. D. Mears. (See Mears & Houlton.) | Rakes..... Snow-plough, railroad..... Brick-machines..... Brick-machines..... Carding-machines..... Planters, seed..... | Oct. 6, 1857..... Dec. 22, 1857..... May 5, 1857..... Mar. 17, 1857..... April 21, 1857..... Feb. 10, 1857..... | I. X. XV. XV. III. I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|---------------------|----------|
| 16396 | House, Royal E..... | Gates, device by which persons approaching may open | Jan. 13, 1857..... | IX. |
| 16947 | Houston, William H..... | Type, composing and distributing, machine for..... | Mar. 31, 1857..... | XVIII. |
| 16283 | Howard, Charles A..... | Gate, approach-opening..... | Sept. 29, 1857..... | IX. |
| 17837 | Howard, George C..... | Shovel, spade, or dung-fork handles..... | July 21, 1857..... | I. |
| 868 | Howard, James L..... | Stoves, railroad car..... | Jan. 27, 1857..... | Design. |
| 16589 | Howard, Lewis P..... | Paddle-wheels, feathering..... | Feb. 10, 1857..... | VII. |
| 18202 | Howard, Lewis P..... | Paddle-wheels, feathering..... | Sept. 15, 1857..... | VII. |
| 17375 | Howard, William H..... | Looms..... | May 26, 1857..... | III. |
| 16838 | Howarth, John..... | Fibrous materials, method of cleansing..... | Mar. 17, 1857..... | III. |
| 17679 | Howe, E., jr., and W. R. Bliss..... | Sewing-machines..... | June 30, 1857..... | III. |
| 16436 | Howe, Elias jr..... | Sewing-machines..... | Jan. 20, 1857..... | III. |
| 17879 | Howe, F. W..... | Engines, &c., governor for..... | July 28, 1857..... | VI. |
| 18453 | Howe, George..... | Piano-forte action..... | Oct. 20, 1857..... | XVIII. |
| 18340 | Howell, Charles..... | Reaping and mowing machines, guard-finger for..... | Oct. 6, 1857..... | I. |
| 18452 | Howell, David..... | Bending flanges on boiler-heads, machine for..... | Oct. 20, 1857..... | II. |
| 17330 | Howell, Edward..... | Photographs from glass to paper, process for re-moving..... | May 19, 1857..... | XVIII. |
| 500 | Howell, Edward..... | Photographs from glass to paper, process for re-moving..... | Sept. 22, 1857..... | Reissue. |
| 17041 | Howell, J. R..... | Water-wheels, adjustable buckets to the shafts of, method of attaching..... | April 14, 1857..... | XI. |
| 18904 | Hoyt, Henry T., & al. (See Williams, Thomas W., assignor.) | Sewing-machines..... | Dec. 22, 1857..... | III. |
| 17376 | Hubbard, George W..... | Carriage, horse and shafts from a, apparatus for discharging a..... | May 26, 1857..... | X. |
| 16517 | Hubbard, Guy H., deceased, Clarissa A. Hubbard, administratrix of..... | Apples, paring and slicing, machines for..... | Jan. 27, 1857..... | XVII. |
| 16442 | Hubbard, M. G..... | Harvesters, cutters for..... | Jan. 20, 1857..... | I. |
| 16441 | Hubbard, M. G..... | Harvesters..... | Jan. 20, 1857..... | I. |
| 426 | Hubbard, M. G..... | Reapers, raking-attachment for..... | Feb. 3, 1857..... | Reissue. |
| 16840 | Hubbard, M. G..... | Harvesters..... | Mar. 17, 1857..... | I. |

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|-------|---|--|----------------|----------|
| 17151 | Hubbard, M. G. | Harvester-frames | April 28, 1857 | I. |
| 17250 | Hubbard, M. G. (No. 3) | Harvesters | May 12, 1857 | I. |
| 17277 | Hubbard, M. G. (No. 2) | Harvesters | May 12, 1857 | I. |
| 17355 | Hubbard, M. G. | Harvesters, cutting apparatus of | June 16, 1857 | I. |
| 16454 | Hubbard, Moses G. | Harvesters | Jan. 27, 1857 | I. |
| 17606 | Hubbard, Samuel C., assignor to Charles C. Hubbard. | Measures, lineal, machines for graduating | June 16, 1857 | VIII. |
| | Hubbard, W. W. L., and N. L. Bradley. (See Chiquini, Pietro.) | | | |
| | Hubbell, Roberts, & Wood. (See Wood, and Hubbell, & Roberts.) | | | |
| 16546 | Huey, William | Shingle-machine | Feb. 3, 1857 | XIV. |
| 17377 | Huffer, Abraham | Washing-machines | May 26, 1857 | XVII. |
| 18642 | Huffer, Abraham | Washing-machine | Nov. 17, 1857 | XVII. |
| 18284 | Hughes, Amos P. | Musical instruments, reed-stops for | Sept. 29, 1857 | XVIII. |
| 18148 | Hughes, D. W. | Planters, corn | Sept. 8, 1857 | I. |
| 17278 | Hughes, Henry | Presses for cotton, &c. | May 12, 1857 | XII. |
| 16596 | Hull, Addison | Sewing-machines, guide for | Feb. 10, 1857 | III. |
| 17096 | Hall, Alonzo G. | Medicinal agents, means for inhaling | April 21, 1857 | XX. |
| 17789 | Hulekamp, G. Henry | Piano-fortes | July 14, 1857 | XVIII. |
| 17838 | Hulekamp, G. Henry | Piano-fortes, metallic bridge for | July 21, 1857 | XVIII. |
| 18149 | Humaston, J. P. | Telegraphic-signals, transmitting, machines for punching paper filets for. | Sept. 8, 1857 | VIII. |
| 18747 | Humberger, Adam | Harvesters, corn | Dec. 1, 1857 | I. |
| 17576 | Hummell, Peter E. | Leather, scouring and setting, machines for | June 16, 1857 | XVI. |
| 16923 | Humphrey, John | Clothes-press, slats in, machine for cutting | Mar. 31, 1857 | XVII. |
| 18268 | Humphrey, John, assignor to himself and Amos E. Perry. | Lathes for manufacture of clothes-press, &c. | Sept. 22, 1857 | XIV. |
| 17152 | Humphrey, S. Dwight | Photographic pictures, engraving, &c., preparation of. | April 26, 1857 | XVIII. |
| 16978 | Hunt, James G. | Gate-post, attachable to any panel of its corresponding field fence. | April 7, 1857 | IX. |
| 474 | Hunt, James G. | Fence, portable field | June 30, 1857 | Reissue. |
| 18096 | Hunt, N., et al. (See Niles, Peter H., assignor.) Hunt, Stephen B. Huntington & Co., Thurston, & Ward. (See Thurston, Stephen, assignor) Huntington, Wait T., and Henry Piatta. (See Atkins & Burritt, assignors.) | Harvesters, raking device for | Sept. 1, 1857 | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|---|---|---|---|---|
| 16584 17279 | Hurd, Alvin Hurd, Julius C. Hurlbut, Rogers, Sperry, & Ashmead. (See White, Leroy S., assignor.) | Hats, felt, method of surfacing..... Process of treating raw cotton | Feb. 10, 1857 May 12, 1857 | III. IV. |
| 16924 17969 16648 449 450 | Hurst, Abraham R. Huse, Samuel Huson, Edgar Hussey, Obed. (A) Hussey, Obed. (B) | Husking corn, machine for..... Capstans, ships' Wagons, gearing for Reaping-machines Reaping-machines | Mar. 31, 1857 Aug. 11, 1857 Feb. 17, 1857 April 14, 1857 April 14, 1857 | I. VII. X. Reissue. Division re- issue. |
| 451 | Hussey, Obed. (C) | Reaping-machines | April 14, 1857 | Division re- issue. |
| 16732 875 | Hustace, William, and William E. Treadwell. (See Treadwell & Hustace.) Hutchins, Charles Hutchinson, James, assignor to J. E. Whipple, and Stephen E. Haskell. | Axes, making, machines for..... Oil-cloths, floor..... | Mar. 3, 1857 Mar. 10, 1857 | II. Design. |
| 18905 16922 18850 16485 915 18586 17503 18643 18590 17577 16443 18014 882 970 18608 | Huyett, William G. Hyams, Hyam Jacob Hyatt, Valentine Hyde, Edward G. Hyde, James R. Hyde, James R. Hyde, Joseph, and William Stearns Hyndman, W. G. Ingles, Joseph Ingersoll, Charles B. Ingersoll, J. O. M. Ingersoll, Jared O. M. Ingraham, Elias Ingraham, Elias Ingraham, Hanford..... | Corn-stalks, machine for cutting and grinding Gas-metres, dry Rakes, horse..... Auricle, acoustic..... Stoves, cooking..... Stoves, cooking..... Valves, puppet, method of guiding and cushioning .. Forge, portable..... Drills, grain..... Ploughs Apples, paring, machine for..... Buttons, metal, manufacturing..... Clock cases..... Clock fronts..... Planters, corn..... | Dec. 22, 1857 Mar. 31, 1857 Dec. 15, 1857 Jan. 27, 1857 July 14, 1857 Nov. 10, 1857 June 9, 1857 Nov. 17, 1857 Nov. 10, 1857 June 16, 1857 Jan. 20, 1857 Aug. 18, 1857 April 14, 1857 Dec. 22, 1857 Oct. 27, 1857 | I. IV. I. XX. Design. V. XI. II. I. I. XVII. XXI. Design. Design. I |

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|-------|---|--|---------------------|-----------|
| 18748 | Irwin, John | Seats, standard for..... | Dec. 1, 1857..... | XVII. |
| 17739 | Irwin, Joseph | Harvesters, cutting apparatus for..... | July 7, 1857..... | I. |
| 17740 | Isham, Henry | Looks | July 7, 1857..... | II. |
| 17065 | Ivens, Edmund M., assignor to E. M. Ivens and L. H. Allen..... | Mines, winding machinery for | April 14, 1857..... | IX. |
| 17096 | Ivers, Edward, and Joseph D. Greene. (See Greene & Ivers, assignors to Greene.) | | | |
| 17097 | Jackson, George R..... | Vault covers | April 21, 1857..... | IX. |
| 18851 | Jackson, George R..... | Vaults, ventilating, method of | April 21, 1857..... | IX. |
| 18097 | Jackson, George R..... | Vault-covers | April 22, 1857..... | Disclaim. |
| | Jackson, George R..... | Vault-light covers..... | Dec. 15, 1857..... | IX. |
| | Jackson, James W., and L. W. Burchinal..... | Carriage-wheels, hub for..... | Sept. 1, 1857..... | X. |
| | Jackson, M. W., and W. H. Woodin. (See Steffe, Horton, & Currie, assignors.) | | | |
| 18075 | Jackson, Silas E. and Morgan P..... | Mowing-machines | Dec. 29, 1857..... | I. |
| 18076 | Jackson, Silas E. and Morgan P..... | Mowing-machines | Dec. 29, 1857..... | I. |
| 18150 | Jackson, W. R..... | Car-brake, railroad, automatic..... | Sept. 8, 1857..... | X. |
| 16567 | Jacobs, Lydia, administratrix of Amos Jacobs, deceased..... | Washing-machines | Feb. 3, 1857..... | XVII. |
| 18852 | James, Charles C..... | Seeding-machines | Dec. 15, 1857..... | I. |
| 18694 | Jane, Reuben..... | Boats, canal, attaching paddle-wheels to | Nov. 24, 1857..... | VII. |
| 18641 | Jarboe, J. W..... | Photographic plate-vice..... | Mar. 17, 1857..... | XVIII. |
| 17378 | Jarratt, W. A..... | Shingle-machine | May 26, 1857..... | XIV. |
| 17680 | Jay, J. M..... | Mortising and boring machine | July 23, 1857..... | XIV. |
| 17220 | Jayne, Joseph W..... | Brick-machines..... | May 5, 1857..... | XV. |
| 17438 | Jefferies, Aaron..... | Kiln, lime..... | April 21, 1857..... | XV. |
| 917 | Jenkins, Henry, assignor to the New York Wire Railing Company..... | Railings, iron..... | July 21, 1857..... | Design. |
| 18151 | Jenkins, J. V..... | | | |
| 18695 | Jenkins, John D..... | Shearing-machines, sheep..... | Sept. 8, 1857..... | I. |
| | Jenkins, Richard, and E. W. Stephens. (See Stephens & Jenkins.) | Washing-machine..... | Nov. 24, 1857..... | XVII. |
| 18285 | Jenks, Edward A., and John Underwood..... | Sewing-machines..... | Sept. 29, 1857..... | III. |
| 17766 | Jenks, Lemuel P., and George A. Gardner, assignors to George A. Gardner..... | Drilling, rock, machines | July 7, 1857..... | IX. |
| 17705 | Jenks, Lemuel P., and George A. Gardner..... | Drilling, rock, machines | July 7, 1857..... | IX. |
| 16925 | Jennings, R. S..... | Carriage-tops | Mar. 31, 1857..... | X. |
| 17680 | Jennings, R. S..... | Carriage-top | June 30, 1857..... | X. |
| 883 | Jerome, Chauncey..... | Clock-case fronts | April 14, 1857..... | Design. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date | Class. |
|-------|---|---|----------------|-------------|
| 959 | Jerome, Samuel B. | Clock-cases | Oct. 20, 1857 | Design. XX. |
| 16360 | Jewett, Benjamin W. | Legs, artificial | Jan. 6, 1857 | XVIII. |
| 18399 | Jewett, Stanley A. | Melodeons | Oct. 13, 1857 | XXII. |
| 16335 | Jilison, C. | Traps, animal, manufacture of | Jan. 6, 1857 | II. |
| 18205 | Jilison, C. | Wire, pointing, machine for | Sept. 16, 1857 | III. |
| 18204 | Jilison, Julius A., and Henry Whimfield | Fibrous and textile substances, method of treating, in a vacuum for cleansing purposes. | Sept. 15, 1857 | XVIII. |
| 17741 | Jocelyn, Albert H. | Electrotype-plates, method of backing | July 7, 1857 | XIX. |
| 17792 | Johns, William B. (U. S. A.) | Cartridges, shot | July 14, 1857 | III. |
| 16387 | Johnson, A. F. | Sewing-machines | Jan. 13, 1857 | VII. |
| 18614 | Johnson, Almer | Propellers | Dec. 8, 1857 | II. |
| 18906 | Johnson, Asa | Rolling cornice, machine for | Dec. 22, 1857 | IX. |
| 17331 | Johnson, Asa, assignor to himself, Henry Link, and William Higbie. | Roofs, &c., sheet metal on, mode of fastening | May 19, 1857 | Reissue. V. |
| 467 | Johnson, Charles H. | Gas-burners | June 2, 1857 | V. |
| 17133 | Johnson, Charles H., assignor to C. H. Johnson and J. G. Hamblin. | Gas-burners, argand | April 21, 1857 | V. |
| 16820 | Johnson, Charles H., assignor to Charles H. Johnson and James G. Hamblin. | Gas-cocks, spigets of, device by which the, may be lubricated on their seats. | Mar. 10, 1857 | I. |
| 17839 | Johnson, Elmore. | Troughs, hog | July 21, 1857 | IX. |
| 16486 | Johnson, F. G. (See Whitmore, M. J., assignor.) | Fence-posts, method of constructing | Jan. 27, 1857 | XI. |
| 17681 | Johnson, Frank G. | Lock, permutation | June 30, 1857 | V. |
| 17791 | Johnson, Isaac G. | Furnaces, iron, use of coal-tar in | July 14, 1857 | XVII. |
| 17281 | Johnson, J., and C. Tompkins. (See Tompkins & Johnson.) | Bedsteads, folding | May 12, 1857 | III. |
| 18454 | Johnson, Jesse | Cotton-cleaners | Oct. 20, 1857 | VI. |
| 16842 | Johnson, Michael H. | Rope manufacture | Mar. 17, 1857 | I. |
| 17042 | Johnson, Nelson | Boilers, steam | April 14, 1857 | IX. |
| 18613 | Johnson, S., and L. Johnson, jr. | Harvesters | Dec. 8, 1857 | IX. |
| 17687 | Johnson, William L. | Stores, mode of constructing | June 23, 1857 | IX. |

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|-------|--|---|----------------------|--------------|
| 18956 | Johnston, William | Cork-sole stuff | Sept. 29, 1857 | IV. |
| | Jones, Charles E., and Porter Hill. (See Hill & Jones.) | | | |
| 17970 | Jones, Edward C. | Carriages, steam, steering apparatus of. | Aug. 11, 1857 | X. |
| 18749 | Jones, Edward C. | Ploeghs, gang | Dec. 1, 1857 | I. |
| | Jones, Edward, & al. (See Fetter, George, assignor.) | | | |
| 18015 | Jones, Francis H. | Eye-shading apparatus | Aug. 18, 1857 | XX. |
| 18907 | Jones, J. H. (See Patterson, Andrew, assignor.) | Printing-presses, hand | Dec. 22, 1857 | XVIII. |
| 16359 | Jones, James | Measuring boards, instrument for | Jan. 6, 1857 | VIII. |
| | Jones, Richard W., and A. V. Hough. (See Hough & Jones.) | | | |
| 17742 | Jones, Samuel F. | Fences, field, panels of, method of connecting the | July 7, 1857 | IX. |
| 16388 | Jones, William | Forks, hay | Jan. 13, 1857 | I. |
| 18047 | Jordan, J. H., & al. (See Merryman, John M., assignor.) | Forks, hay and measure | Aug. 25, 1857 | I. |
| 472 | Jordan, William A. | Ferry-boats, line, or flying bridges, means for guiding | June 16, 1857 | Reissue. |
| 433 | Joslyn, B. F. | Fire-arms, breech-loading | Mar. 3, 1857 | Reissue. |
| 16733 | Joslyn, B. F. | Wrench, screw | Mar. 3, 1857 | II. |
| 16843 | Joslyn, B. F. | Apples, paring, machines for | Mar. 17, 1857 | XVII. |
| 16844 | Joslyn, B. F. | Wrench, screw | Mar. 17, 1857 | II. |
| 16487 | Jourd, John P. | Vessels, sunken, raising | Jan. 27, 1857 | VII. |
| 17099 | Judd, Chas. G. (See Ketcham, Charles, assignor.) | Saw-set | April 21, 1857 | XIV. |
| 17153 | Judd, Oliver B. | Saw-gumner | April 28, 1857 | XIV. |
| 18908 | Judd, Oliver B. | Dynamometer | Dec. 22, 1857 | VIII. |
| 18455 | Jungst, George | Thrashing-machine, endless apron of. | Oct. 20, 1857 | I. |
| 17221 | Justice, H. L., and John H. Galbreath | Planters, corn seed | May 5, 1857 | I. |
| 17223 | Kaef, Matthias | Motion, transmitting | May 5, 1857 | XIII. |
| 18036 | Kahnweiler, David | Chair, rocking, ventilating | Nov. 24, 1857 | XVII. |
| | Kalley, J., and J. H. Miller, assignors to themselves and J. Danner. (See Miller & Kalley, assignors.) | | | |
| 169 | Keech, J., and S. Stillwell | Winnowing-machines | July 7, 1857 | Add'l Imp't. |
| 17982 | Keeler, J. F. | Bed-bottoms | May 12, 1857 | XVII. |
| | Keene, G. W., & al. (See Whitmore, Nathaniel, assignor.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 17154 | Keiler, Levi..... | Pumps, atmospheric..... | April 28, 1857..... | XI. |
| 16488 | Keith, Edwin..... | Gins, cotton..... | Jan. 27, 1857..... | III. |
| 17155 | Keith, Edwin..... | Cotton-gins, saw, brushes of..... | April 28, 1857..... | III. |
| 17283 | Keller, John C..... | Stoves, coal..... | May 12, 1857..... | V. |
| 18911 | Kellogg, C. D., and W. S. Coan..... | Doors, glass knobs for..... | Dec. 22, 1857..... | II. |
| 16979 | Kellogg, Daniel J..... | Photographic trays..... | April 7, 1857..... | XVIII. |
| 17283 | Kellogg, Hiram..... | Grain, cutting and binding, machines for..... | May 5, 1857..... | I. |
| 18853 | Kellogg, Hiram..... | Seeding-machines..... | Dec. 15, 1857..... | II. |
| 16596 | Kellogg, W. W..... | Sash-fastener..... | Feb. 10, 1857..... | IX. |
| 16632 | Kellogg, Daniel, and William Livingston..... | Window-blinds..... | Feb. 10, 1857..... | IX. |
| 18458 | Kelly, James Q..... | Harpoons..... | Oct. 20, 1857..... | VII. |
| 18815 | Kelly, Samuel..... | Bee-hives..... | Dec. 8, 1857..... | I. |
| 16444 | Kelly, William..... | Furnace, blast..... | Jan. 20, 1857..... | II. |
| 17628 | Kelly, William..... | Iron, manufacture of..... | June 23, 1857..... | II. |
| 505 | Kelly, William..... | Iron, manufacture of..... | Nov. 3, 1857..... | Release. |
| 18910 | Kelly, William..... | Iron, refining..... | Dec. 22, 1857..... | II. |
| 16926 | Kelsey, Albert..... | Bee-hives..... | Mar. 31, 1857..... | I. |
| | Kelty, Gibbons L., and D. M. Ferguson. (See Lloyd, Daniel, assignor.) | | | |
| 18456 | Kemble, William, and William H. C. Bardlett..... | Lamps, shades for..... | Oct. 20, 1857..... | V. |
| 16876 | Kendall, Franklin B..... | Saw-mills, double carriages in, method of operating..... | Mar. 24, 1857..... | XIV. |
| 17840 | Kendall, Franklin B..... | Sawing-mill..... | July 21, 1857..... | XIV. |
| 17284 | Kendall, Franklin B..... | Blacksmith's striker..... | May 12, 1857..... | II. |
| 17156 | Kendall, Thomas, sr..... | Propelling-wheels, submerged..... | April 28, 1857..... | VII. |
| 17043 | Kennedy, David H..... | Tanning hides, composition for..... | April 14, 1857..... | XVI. |
| | Kennedy, E., and J. H. Newman, et al. (See Freeman & Farley, assignors.) | | | |
| 17689 | Kennedy, James G..... | Sawing-mill..... | June 23, 1857..... | XIV. |
| 17432 | Kennedy, Michael..... | Saws, hand, gauge-attachment for..... | June 2, 1857..... | XIV. |
| 17306 | Kennish, William, assignor to Andrew B. Gray..... | Excavator, sub-marine..... | May 12, 1857..... | IX. |
| 16594 | Kent, Joseph. (See Brown, J. S., assignor.) | Process of smelting zinc iron-ore..... | Feb. 10, 1857..... | IV. |

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|-------|--|---|----------------|--------------|
| 18909 | Kenyon, William | Screw-cutting machine | Dec. 29, 1857 | II. |
| 18980 | Kepler, Israel | Smut-machines | April 7, 1857 | XIII. |
| 17044 | Kerr, James | Fire-arms, many-chambered breech, rammer for | April 14, 1857 | XIX. |
| 18012 | Ketcham, A. R. | Hydraulic valve | Dec. 22, 1857 | XI. |
| 17285 | Ketcham, George F. | Mortising chisel | May 12, 1857 | XIV. |
| 18697 | Ketcham, Joshua and John Waterman | Harvesters, bean | Nov. 24, 1854 | I. |
| 17305 | Ketcham, Charles, assignor to C. G. Judd | Planters, seed | June 2, 1857 | I. |
| 466 | Ketchum, William F. | Harvesters, grass | May 2, 1857 | Release. |
| 18816 | Kyser, Edward S. | Vessels, securing hatches of | Dec. 8, 1857 | VII. |
| 421 | Kibb, Theodore C. (See Floyd, James R., assignors.) | Bonnet-fronts, moulds for pressing | Jan. 13, 1857 | Release. |
| 16300 | Kidd, Whitten | Chair-seats, solid wooden, machine for forming the curved surface of | Mar. 10, 1857 | XIV. |
| 17128 | Killmer, Robert, and Joshua Williams, assignors to Robert Killmer. | Blacksmith's butters | April 21, 1857 | II. |
| 17509 | Kilpatrick, E. N. | Wheelwright's machine | June 9, 1857 | X. |
| 18152 | Kimball, John | Boots and shoes, lasting, machine for | Sept. 8, 1857 | XVI. |
| 18315 | Kimball, John, assignor to Robert Hale | Locomotives, tanks for | Sept. 29, 1857 | VI. |
| | King, G. C. & al. (See Lewis, Charles N., assignor.) | | | |
| 18457 | King, George C. (See Lewis, Charles N., assignor.) | Nail-machine | Oct. 20, 1857 | II. |
| 17100 | King, J. S. | Stoves, cooking | April 21, 1857 | V. |
| | King, Thomas | | | |
| | King, William R. (See Hotchkiss and Schofield, assignors.) | | | |
| 18342 | Kingsberry, Sanford | Corn, shucking and shelling, machine for | Oct. 6, 1857 | I. |
| 18343 | King, Samuel L. and David Gore | Ploughs, gang | Oct. 6, 1857 | I. |
| | Kinsley, Edward G., and M. W. Stevens. (See Stevens and Kinsley.) | | | |
| 16389 | Kinsley, Rodolphus | Presses | Jan. 13, 1857 | XII. |
| 17793 | Kipp, Charles T., and John Lawrenson | Cars, hand, applying fly-wheel to | July 14, 1857 | X. |
| 18267 | Kirby, Josiah | Bungs, machine for cutting | Sept. 29, 1857 | XIV. |
| | Kite, James, and William Needham. (See Needham and Kite.) | | | |
| 18977 | Kittinger, Levi | Mortising-machines, device for throwing into and out of gear the tool of | Dec. 29, 1857 | XIV. |
| 182 | Klein, Ferdinand | Skates | Dec. 22, 1857 | Add'l imp't. |
| 16845 | Kline, Calvin | Ships, magnetic needle on, mode of compensating the local attraction of the | Mar. 17, 1857 | VII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|--------------|
| 18016 | Kling, Magnus. Klink, John J. and William Vogt. (See Vogt and Klink.) | Powder, percussion..... | Aug. 18, 1857..... | XIX. |
| 16981 | Knapp, A. H..... | Lamp-burners..... | April 7, 1857..... | V. |
| 861 | Knapp, John H..... | Pencil-cases, ever-pointed..... | Jan. 6, 1857..... | Design. III. |
| 17379 | Knauer, Christian..... | Yarn or thread, reels for..... | May 26, 1857..... | I. |
| 17157 | Knauer, Isaiah..... | Harvesters..... | April 28, 1857..... | VII. |
| 17434 | Knight, James..... | Life-preservers..... | June 2, 1857..... | XIV. |
| 16777 | Knight, Trietram D..... | Boards to uniform thickness, machine for reducing and smoothing..... | Mar. 3, 1857..... | XI. |
| 17433 | Knowles, L. J..... | Faucet..... | June 2, 1857..... | VI. |
| 18048 | Knowles, L. J..... | Steam-pressure regulator..... | Aug. 26, 1857..... | VI. |
| 16596 | Knowles, Lucius J..... | Boilers, steam, safety-indicators for..... | Feb. 10, 1857..... | III. |
| 16734 | Knowles, Lucius J..... | Shuttles, weavers'..... | Mar. 3, 1857..... | XIII. |
| 17743 | Knowles, Lucius J..... | Belt-shifter for machinery..... | July 7, 1857..... | XII. |
| 18592 | Knowles, Lucius J..... | Jack-lifting..... | Nov. 10, 1857..... | VII. |
| 17971 | Knowlton, David..... | Capstans, ships'..... | Aug. 11, 1857..... | III. |
| 16927 | Koch, Louis..... | Pasteboard, making, machines for..... | Mar. 31, 1857..... | V. |
| 16928 | Koch, Louis..... | Pasteboard, pressing water out of, machinery for..... | Mar. 31, 1857..... | XVIII. |
| 17510 | Kohler, John B..... | Sieves, coal..... | June 9, 1857..... | X. |
| 17981 | Kolb, Charles F..... Kolman, A., and Elias Schneider. (See Schneider & Koltman) | Breastpins, mode of fastening..... | July 28, 1857..... | XVIII. |
| 18409 | Krouse, F. W. A..... | Cars, &c., railroad, implement for sealing..... | Oct. 13, 1857..... | XVIII. |
| 18489 | Krenkle, K (See Maurer, William, assignor.) Kuhn, Anthony..... Kuhn, George, J. Foster, and J. Herbold. (See Foster, Junius, assignor.) Kuhn, George, J. Foster, and J. Herbold. (See Foster, Junius, assignor) | Harps, keyed..... | Jan. 27, 1857..... | XXI. |
| 17934 | Kurtz, Ernst L..... | Horses, device for protecting the necks of, from flies..... | Aug. 4, 1857..... | I. |
| 17980 | Kuschke, Robert, and P. Merkel..... | Planters, corn..... | May 26, 1857..... | I. |

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|-------|--|---|----------------|--------|
| 18919 | La Baw, George W., assignor to himself and Charles A. Durgin. | Sails, reefing and furling, arrangement of means for. | Sept. 15, 1857 | VII. |
| 17883 | Lachloutte, P. R., and T. B. Bowman | Rice, cleaning, machines for | July 28, 1857 | XIII. |
| 17101 | La Croix, F. C., and Chauncey Barnes | Sails, reefing | April 21, 1857 | VII. |
| 17045 | Lafetra, D. H. and H. A. | Harvesters, raking attachment for | April 7, 1857 | I. |
| 18049 | Laidley, T. T. S. (U. S. A.) | Projectile for rifled cannon | Aug. 25, 1857 | XIX. |
| 17935 | Laidley, Theodore T. S. (U. S. A.) | Projectiles for rifled cannon | Aug. 4, 1857 | XIX. |
| 17655 | Lamb, Salem T. | Harvesters, self-acting rakes for | June 30, 1857 | I. |
| 17794 | La Mothe, B. J. | Car seats, railroad | July 14, 1857 | X. |
| 18206 | Lamson, David A. J. | Belt-tool | Sept. 15, 1857 | II. |
| 16597 | Landenberger, Martin. (See Viokertag, Joseph.) | Planters, seed | Feb. 10, 1857 | I. |
| 17256 | Landy, James, et al. (See Page, John F.) | Plane, joiner's | May 12, 1857 | XIV. |
| 18751 | Lane, Benjamin, J. | Melodeons, &c., pedal-base for | Dec. 1, 1857 | XVIII. |
| 18750 | Lane, George W., and William N. Manning | Ploughs | Dec. 1, 1857 | I. |
| 18622 | Lapham, Allen, assignor to himself and Joseph B. Bennett. | Lard-rendering kettles | Nov. 10, 1857 | IV. |
| 18072 | Lark, George, and H. Schreiner, jr. (See Schreiner, Henry, jr., assignor.) | Sewing-machines | Aug. 25, 1857 | III. |
| 18459 | Larkin, Samuel, assignor to The Wheeler and Wilson Manufacturing Co. | Ploughs | Oct. 20, 1857 | I. |
| 17332 | Lash, John S. | Plane, joiner's | May 19, 1857 | IV. |
| 17683 | Lashbrook, James | Steam pistons, metallic packing for | June 30, 1857 | VI. |
| 16982 | Laisher, Daniel | Staging-brackets, arrangement of | April 7, 1857 | IX. |
| 17744 | Latham, Joseph B. | Sewing-machines | July 7, 1857 | III. |
| 17972 | Lathbury, E. T. | Lubricator, automatic, for railroad car axles | Aug. 11, 1857 | XII. |
| 18460 | Latta, A. B. | Steam generators | Oct. 20, 1857 | VI. |
| 18752 | Latta, A. B. | Car-wheels, railroad | Dec. 1, 1857 | X. |
| 16337 | Laubach, J. J. | Metal, sheet, forming joints of | Jan. 6, 1857 | II. |
| 16913 | Law, Lorenzo D. | Planters, cotton seed | Dec. 22, 1857 | I. |
| 18978 | Lawrence & Abbott. (See Smith, Brown, & Sailor, assignors.) | Seeding-machines | Dec. 29, 1857 | I. |
| | Lawrence & Abbott. (See Smith, Brown, & Sailor, assignors.) | | | |
| | Lawrenson, John, and Charles T. Kipp. (See Kipp & Lawrenson.) | | | |
| | Lawson, James | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|------------------------|
| 17936 | Lawson, O. L., and A. A. Starr. | Gas-regulator stop-cock..... | Aug. 4, 1857..... | IV. |
| 18547 | Lawson, W. H., <i>et al.</i> (See Henlings, Joseph.) | Saws, scroll, method of operating..... | Nov. 3, 1857..... | XIV. |
| 18914 | Lawton, John L..... | Soythes, tempering, furnaces for..... | Dec. 22, 1857..... | II. |
| | Lazell, Judson A. (See Briggs, Joseph W, as-signor.) | | | |
| 18917 | Lazelle, William H..... | Sewing-machine..... | Dec. 8, 1857..... | III. |
| 18915 | Lazelle, William H..... | Sewing-machines..... | Dec. 22, 1857..... | III. |
| 159 | Leach, James O..... | Looms..... | Mar. 3, 1857..... | Add'l imp't. XVIII. |
| 17405 | Learned, S. D., assignor to A. C. Learned..... | Printing-presses..... | May 26, 1857..... | V. |
| 18918 | Leclair, Francis..... | Lamps..... | Dec. 8, 1857..... | I. |
| 16735 | Lee, Caleb..... | Reaping-machines, rakes for..... | Mar. 3, 1857..... | XVIII. |
| 17308 | Lee, Eliaba..... | Printing, painting, &c, canvas for, method of pre-paring. | May 12, 1857..... | |
| 18919 | Lee, Francis D..... | Vessels, life and treasure, buoy, for arrangement of.. | Dec. 8, 1857..... | VII. |
| 18698 | Lee, Joel..... | Ploughs, gang..... | Nov. 24, 1857..... | I. |
| 18920 | Lee, Joel..... | Ploughs..... | Dec. 8, 1857..... | I. |
| 18821 | Lee, Joel..... | Planters, seed..... | Dec. 8, 1857..... | I. |
| | Lee, Squire. (See Andrus, C. H.) | | | |
| 17102 | Lefebvre, L. H..... | Bathing-apparatus..... | April 21, 1857..... | XX. |
| 17578 | Lefferts, John W..... | Stoves, foot..... | June 16, 1857..... | V. |
| 18153 | Leider, J. George..... | Carriages, wear-iron for..... | Sept. 8, 1857..... | X. |
| 18980 | Legg, James M..... | Cotton, plastic, preparing, for moulding purposes..... | Dec. 29, 1857..... | IV. |
| 17579 | Legg, L. W. & E. D..... | Ploughs..... | June 16, 1857..... | I. |
| | Leibrant, McDowell, & Co. (See Smith, Brown, & Read.) | | | |
| | Leibrant, McDowell, & Co. (See Smith, Brown, & Read.) | | | |
| | Leibrant, McDowell, & Co. (See Smith & Brown, assignors.) | | | |
| | Leibrant, McDowell, & Co. (See Smith & Brown, assignors.) | | | |

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|-------|--|---|----------------|--------|
| 17381 | Leibnaut, McDowell, & Co. (See Smith & Brown, assignors.) | Compositions, sizing, for yarns, paper, &c | May 30, 1857 | IV. |
| 16736 | Leigh, John | Cock, basin | Mar. 3, 1857 | XI. |
| 18753 | Leitch, Robert | Banding-machine | Dec. 1, 1857 | XIII. |
| 16688 | Leuzmann, Charles | Casting skins for wagons | Feb. 24, 1857 | II. |
| 16983 | Leonard, Andrew | Liquid-metre | April 7, 1857 | XI. |
| 18644 | Leopold, Otto G. | Hooker, corn | Nov. 17, 1857 | I. |
| 17653 | Lewis, Charles N., assignor to George C. King | Pumps, air-chamber to, method of attaching | June 23, 1857 | XI. |
| 18660 | Lewis, Charles N., assignor to himself and G. C. King | Pumps, ventilating-attachment to be applied to | Nov. 17, 1857 | XI. |
| 17103 | Lewis, Mark M. | Hair, curling, instrument for | April 21, 1857 | XXI. |
| 17841 | Lewis, Norman A. | Planters, corn | July 21, 1857 | I. |
| 16946 | Lewis, Samuel S. | Gold, washing, machine for | Mar. 31, 1857 | II. |
| 16737 | Lewis, William | Husking corn, machines for | Mar. 3, 1857 | I. |
| 16738 | Lewis, William & William H. | Photographic plate-holder | Mar. 3, 1857 | XVIII. |
| 16490 | Lieurner, Charles T. | Rail, compound, for railroads | Jan. 27, 1857 | |
| 17883 | Lightcap, S., and N. C. Sherman. (See Sherman & Lightcap.) | Roofing, mastic, compositions | July 28, 1857 | IX. |
| 18608 | Lilley, James M. | Surveying and calculating areas, instrument for | Nov. 10, 1857 | IX. |
| 16649 | Lillie, Samuel, jr | Brick-press | Feb. 17, 1857 | VIII. |
| 17387 | Lindner, Edward | Cartridges | May 12, 1857 | XV. |
| 17382 | Lindner, Edward | Fire-arms | May 26, 1857 | XIX. |
| 16801 | Lindsey, George | Hydraulic jack | Mar. 10, 1857 | XI. |
| 18289 | Lindsey, William H. | Pumps | Sept. 29, 1857 | V. |
| 18916 | Lindsey, Hosea | Diamonds, &c., setting | Dec. 22, 1857 | XI. |
| 18268 | Lindley, Isaac | Wood, carving, machine for | Sept. 30, 1857 | XVIII. |
| 18917 | Lindley, Isaac | Vessels, extra top-sail yards to, attaching | Dec. 22, 1857 | XIV. |
| 16650 | Linnell, Eber H. | Leather and hides, process of splitting | Feb. 17, 1857 | VII. |
| 17471 | Lippman, Isaac, assignor to M. J. A. Gulet | Yarns, cotton, manufacture of | Oct. 20, 1857 | XVI. |
| | Lippincott, Joseph, and William C. Barr. (See Bate, Ludwig, assignor.) | Hemp-brakes | Jan. 6, 1857 | III. |
| 18461 | Lister, Samuel C., and James Warburton | | | III. |
| 16365 | Little, Harvey, and James Oliver. (See Oliver & Little.) | | | |
| | Livingston, Howell, & Root. (See Karney, N. B., assignor.) | | | |

Patentees of inventions and designs, 1857.

| No | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|----------------------|----------|
| 495 | Livingston, William, and Daniel Kelly. (See Kelly & Livingston.) | Window-shades, apparatus for stencilling | Sept. 15, 1857 | Reissue. |
| 17630 | Lloyd, Daniel, assignor to Gibbons L. Kelty and Dudley M. Ferguson. | Boring-machines, device for feeding and limiting the depth of hole in. | June 23, 1857 | XIV. |
| 18918 | Lloyd, Levi B | Metal tubes, implements for cutting | Dec. 22, 1857 | II. |
| 18930 | Lloyd, Thomas J | Hame-tug fastening | Sept. 29, 1857 | XVI. |
| 18338 | Loeble, Charles, and Samuel J. Smith. (See Smith & Lockie.) | Trunks, travelling | Jan. 6, 1857 | XVI. |
| 18362 | Loewenberg, Henry | Fire-scape ladder | Sept. 22, 1857 | XXII. |
| 17470 | Londinsky, Leon, assignor to L. Londinsky and A. E. Becker. | Irons, sad, holders for | June 2, 1857 | XVII. |
| 17796 | Long, D. W | Car-doors, &c., seal for | July 14, 1857 | X. |
| 18754 | Long, J. M., Peter Black, and Robert Allstatter .. | Harvesters, finger-bars for | Dec. 1, 1857 | I. |
| 18961 | Long, John | Harvesters | Dec. 29, 1857 | I. |
| 17842 | Longacre, George M | Furnaces, bagasse | July 21, 1857 | V. |
| 16689 | Longking, Joseph | Photographic glass holder | Feb. 21, 1857 | XVIII. |
| 18462 | Longshore, Samuel C | Harvesters, swathing apparatus for | Oct. 20, 1857 | I. |
| 18950 | Loomis, Justin | Washing-machines | Aug. 25, 1857 | XVII. |
| 18207 | Lord, Samuel | Spoke-machine | Sept. 15, 1857 | XIV. |
| 18979 | Lothrop, Horace A | Hoes | Dec. 29, 1857 | I. |
| 18509 | Lovejoy, Daniel, and George F. Butterfield | Grinding and polishing machine | Oct. 27, 1857 | II. |
| 17435 | Loveless, C. B | Gas generators, feeding | June 2, 1857 | IV. |
| 16816 | Lovewell, Sewell K | Fire-arms | Mar. 17, 1857 | XIX. |
| 17398 | Low, Francis S., and John J. Bate. (See Bate & Low.) | Boilers, steam, boring fine-sheets of, machine for .. | May 12, 1857 | VI. |
| 17795 | Lowe, Sylvanus V | Hemp-drawing machines | July 14, 1857 | III. |
| 17795 | Lownds, Samuel | | | |
| 17795 | Lowrie, J., and William Pearce. (See Pearce & Lowrie.) | | | |

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| 17383 | Lowthorp, Francis C | Hydro-dynamic machine for testing of materials..... | May 28, 1857..... | XI. |
| 17684 | Lowthorp, Francis C | Bridges, iron truss frames for..... | June 30, 1857..... | IX. |
| 18648 | Lowthorp, Francis C | Bridges, &c., iron truss frames for..... | Nov. 3, 1857..... | IX. |
| 17158 | Luce, C. O..... | Street-sprinkler | April 28, 1857..... | XXII. |
| 18344 | Luce, C. O..... | Planters, seed | Oct. 6, 1857..... | I. |
| 16491 | Ludlum, Matthias..... | Boat, life | Jan. 27, 1857..... | VII. |
| 17580 | Ludlum, S. Y..... | Railroad snow excavators..... | June 16, 1857..... | IX. |
| 17686 | Ludwig, Matthias | Sawing-machine for felling trees | June 30, 1857..... | XIV. |
| 18173 | Lufkin, C. M., assignor to Norris Lufkin | Harvesters..... | Sept. 8, 1857..... | I. |
| 18098 | Lund, George D..... | Sawing-mills, feed and gidding movement for | Sept. 1, 1857..... | XIV. |
| 180 | Lyford, Zebulon | Chairs, portable | Dec. 8, 1857..... | Add'l imp't. |
| 16568 | Lynan, Ariel, assignor to Accelerating Fire-arms Co..... | Fire-arms, accelerating | Feb. 3, 1857..... | XIX. |
| 17973 | Macdonald, John C..... | Fanests, &c., valvular arrangement in..... | Aug. 11, 1857..... | XI. |
| 18051 | MacKenzie, Philip W | Furnaces, cupola | Aug. 25, 1857..... | II. |
| 17159 | Mackey, H. N..... | Churns | April 28, 1857..... | I. |
| 18463 | Magruder, C. B..... | Ploughs..... | Oct. 20, 1857..... | I. |
| 910 | Maguire, J., Joseph A. Read, and Duncan Wright, assignors to Charles Gilbert | Stoves, cooking | July 14, 1857..... | Design. |
| 18345 | Mahan, J. W | Bench, joiner's | Oct. 16, 1857..... | XIV. |
| 17333 | Main, William H..... | Journals of shafts, axles, &c., friction rollers for | May 19, 1857..... | XIII. |
| 16847 | Males, Samuel..... | Mill, cider, convertible | Mar. 17, 1857..... | XIII. |
| 17104 | Mallory, G. H..... | Shingle-machine | April 21, 1857..... | XIV. |
| 18017 | Maltby, Philo | Saws, dressing, machine for | Aug. 18, 1857..... | XIV. |
| 17689 | Maltby, Sidney | Valve-gear for steam-engines..... | June 30, 1857..... | VI. |
| | Maney, James B., et al. (See Holloway C., assignor.) | | | |
| 17289 | Mann, George, jr..... | Elevators, grain, clearing guard for | May 19, 1857..... | XII. |
| 17797 | Mann, Howard..... | Cultivators | July 14, 1857..... | I. |
| | Mann, Russell, and J. J. Dulleay, assignors to Eddy. (See Dulleay & Mann.) | | | |
| | Manning, G. S., and Charles Atkinson. (See Atkinson & Manning.) | | | |
| 17687 | Manning, Joseph S..... | Harvesters, automatic rake for | June 30, 1857..... | I. |
| 17845 | Manning, William N. (See Lane, George W.) | Harvesters, cutting apparatus for..... | July 7, 1857..... | I. |
| 17798 | Manny, John P..... | Harvesters, raking apparatus for..... | July 14, 1857..... | I. |
| 17779 | Manny, John P..... | Harvesters | July 14, 1857..... | I. |
| 18510 | Manny, John P..... | Mowing-machines | Oct. 27, 1857..... | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|--------------|
| 16985 | Manny, P..... | Harvesters..... | April 7, 1857..... | I. |
| 16445 | Manny, Pells..... | Harvesters..... | Jan. 20, 1857..... | I. |
| 16984 | Manny, Pells..... | Harvesters..... | April 7, 1857..... | I. |
| 18052 | Manny, Pells..... | Harvesters, cutting apparatus of..... | Aug. 26, 1857..... | L. |
| 16390 | Maraville, H..... | Balance for detecting counterfeit coin..... | Jan. 13, 1857..... | XII. |
| 18993 | Marcellus, Abraham..... | Mowing-machines, track clearers for..... | Dec. 29, 1857..... | L. |
| 16986 | March, Rinehart P..... | Carriage-springs, arrangement of..... | April 7, 1857..... | X. |
| 17558 | Marchant, Henry A., assignor to Edward D. Mar- chant. | Photography..... | July 21, 1857..... | XVII. |
| 18756 | Marcus, Tobias..... | Planters, cane..... | Dec. 1, 1857..... | I. |
| 18346 | Marling, Leonard S..... | Hubs, wheel, cutter for boring..... | June 16, 1857..... | Add'l imp't. |
| 17164 | Markham, Daniel, and Austin S..... | Seeding-machines..... | Oct. 6, 1857..... | I. |
| | Marland, J., and E. Crockett..... | Cop-tubes..... | April 28, 1857..... | III. |
| 18511 | Marlett and Corbin. (See Corbin and Marlett.) | | | |
| 16391 | Marsh, John W..... | Sewing-machines..... | Oct. 27, 1857..... | III. |
| 17161 | Marsh, William W..... | Press, oil..... | Jan. 13, 1857..... | XII. |
| 16674 | Marshall, Alonzo, assignor to Benjamin Marsh..... | Presses, oil, securing and guiding the boxes of..... | April 28, 1857..... | XII. |
| 17160 | Marshall, Benjamin..... | Can, varnish..... | Feb. 17, 1857..... | XXII. |
| 16547 | Marshall, Chester P..... | Last-holders, revolving..... | April 28, 1857..... | XVI. |
| 18921 | Marshall, Edward..... | Fan-blower..... | Feb. 3, 1857..... | L. |
| 17183 | Marshall, Moses, assignor to Richard Ball and Charles H. Ballard. | Saw-set..... | Dec. 22, 1857..... | II. |
| 18512 | Marshall, Simeon..... | Mortising-machines, method of reversing the chisels of..... | April 28, 1857..... | XIV. |
| 17511 | Marshall, William C., and Horace W. Smith Marshall, William F., & al. (See Shattuck, David, assignor.) | Shingle-machine..... | Oct. 27, 1857..... | XIV. |
| | | Faucets, basin..... | June 9, 1857..... | XI. |
| 893 | Marshbank, John D..... | Stoves, cook's..... | June 2, 1857..... | Design. |
| 17924 | Marston, John P..... | Cloth, turning the edges, of machine for..... | May 5, 1857..... | III. |
| 17366 | Marston, W. W..... | Fire arms, repeating..... | May 26, 1857..... | XIX. |
| 16690 | Martien, J. G..... | Iron and steel, manufacture of..... | Feb. 24, 1857..... | II. |

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|-------|--|---|--|---|
| 18949 | Martin, A. C., and M. M. Wombaugh, assignors to A. C. Martin and E. Ashcroft. Martin, George G. (See Crooker, George R., as assignor.) Martin, Jefferson T., administrator of Parkinson. (See Parkinson, William, deceased.) Martin, Joseph P. (See Bradshaw, John A., as assignor.) Martin, Joseph P. (See Bradshaw, John A., as assignor.) Martin, Lewis..... Martin, Pierre..... Martin, Sabin. (See Gamols & Martin) Martratt, Cornelius..... Marwick, Charles E..... Mary, Nicholas, ar..... Mascher, John F..... Mascher, John F..... Mason, Henry W. (See Taft, George C., as assignor.) Mason, Henry, jr., and George C. Taft. (See Taft & Mason.) Mason, John L..... Mason, Samuel..... Mason, William, and L. N. Fay. (See Fay & Mason) Mason, William, and L. N. Fay. (See Fay & Mason.) Massey, G. B..... Massey, James..... Massey, John..... Massey, John W..... Mathews, Elbridge G., assignor to Harvey Church. Mathiot, George..... Matton, George..... Mathew, David..... Mathews, George..... Matison, James H..... Mattison, William, assignor to John O. Whitin..... | Dec. 22, 1857..... Dec. 22, 1857..... May 26, 1857..... April 21, 1857..... Aug. 26, 1857..... Aug. 11, 1857..... Feb. 10, 1857..... July 14, 1857..... June 9, 1857..... Mar. 24, 1857..... Aug. 11, 1857..... Dec. 15, 1857..... Mar. 3, 1857..... April 28, 1857..... Feb. 10, 1857..... April 28, 1857..... Sept. 15, 1857..... Dec. 8, 1857..... June 30, 1857..... Nov. 3, 1857..... Sept. 1, 1857..... | Sawing-machinery, circular, method of governing the cut of. Engines, steam, feed water attachment to..... Ore-washer..... Presses, &c., hay, method of securing the doors of.. Capstans, ship's..... Dyeing machines, silk..... Decorative cases, &c., process of ornamenting.. Bread-pine, spiral catch for..... Screws of thin metal, manufacturing..... Brooms, clamps for..... Ships, the depth of water in, instruments for indicating Presses, cotton and hay..... Husking-corn, machines for..... Canisters, metallic, for putting up paints, &c..... Dove-tails and their grooves, machine for cutting.. Photographic baths and pans, mode of constructing.. Looms, harness for..... Boilers, steam..... Printing-ink..... Barrel, chumfering and crosing, method of..... List-speeders, condensers for..... | XIV VII II XII VII IV XVIII XVIII II XVII VII XII I XXII XIV XVIII III VI XVIII XIV III |
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Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|-------------|
| 879 | Maurer, William, assignor to K. Krenkle..... | Bedsteads, legs and posts of..... | Mar. 31, 1857..... | Design. II. |
| 18593 | Maxson, John..... | Hinge, spring..... | Nov. 10, 1857..... | XIII. |
| 18099 | Maxson, William P., and J. E. B..... | Sack-fastener..... | Sept. 1, 1857..... | XI. |
| 17443 | Maxwell, James B..... | Fluid-metre..... | June 2, 1857..... | VI. |
| 17894 | May, Ethelred..... | Spark-arresters..... | July 28, 1857..... | XI. |
| 17165 | May, George T..... | Vessels, sails and rigging of..... | April 28, 1857..... | VII. |
| 16492 | May, John M..... | Windmills, self-regulating..... | Jan. 27, 1857..... | XI. |
| 17468 | Mayall, Thomas J., assignor to himself and George N. Davis..... | Looms, pickers for..... | June 2, 1857..... | III. |
| 17166 | Maves, Josiah..... | Washing-machines..... | April 28, 1857..... | XVII. |
| 18426 | Mayfield, W. D., assignor to himself and S. D. Porter..... | Vehicles, detaching horses from, mode of..... | Oct. 13, 1857..... | X. |
| 18100 | Mayhew, Ira..... | Chimney-caps..... | Sept. 1, 1857..... | V. |
| 17469 | Mayhew, Oscar F., assignor to W. H. Weeks and O. F. Mayhew..... | Hominy-machines..... | June 2, 1857..... | XXII. |
| 16691 | Maynard, Edward..... | Horse-shoes, calk for..... | Feb. 24, 1857..... | II. |
| 16986 | Maynard, Richard F..... | Mills, corn and cob..... | April 7, 1857..... | XIII. |
| 16987 | Maynard, Richard F..... | Mills, sectional corn and cob, securing the legs of..... | April 7, 1857..... | XIII. |
| 17937 | Mayo, William S..... | Window-blind sash-holders..... | Aug. 4, 1857..... | IX. |
| 17046 | McCaferdy, Robert..... | Boilers, steam, to prevent incrustations in..... | April 14, 1857..... | VI. |
| 16446 | McCallum, D. C..... | Bridges..... | Jan. 20, 1857..... | IX. |
| 18192 | McCauley, Wm. M., assignor to J. N. McIntire..... | Car-seats, railroad, head rest for..... | Sept. 1, 1857..... | X. |
| 17746 | McCausland, Alexander..... | Paper cop-tubes..... | July 7, 1857..... | III. |
| 17105 | McClain, Galen B..... | Iron, smoothing..... | April 21, 1857..... | XVII. |
| 18767 | McClellan, Henry M..... | Bee-hives..... | Dec. 1, 1857..... | I. |
| 17107 | McClelland, J. A..... | Forceps, dental..... | April 21, 1857..... | XX. |
| | McClelland, John and Linus Stewart. (See Stewart and McClelland.)..... | | | |
| 18768 | McCollum, John..... | Dough, machine for rolling..... | Dec. 1, 1857..... | XVII. |
| 17896 | McConnell, John L..... | Projectiles for smooth-bored guns..... | July 23, 1857..... | XIX. |
| 17436 | McConnell, J. E..... | Boilers, locomotive..... | June 2, 1857..... | VI. |
| 177 | McConnell, James E..... | Boilers, locomotive..... | Oct. 6, 1857..... | Add. Imp. |
| | McCormick, Cyrus H..... | Reaping machines..... | Nov. 18, 1857..... | Disclaimer. |

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|-------|---|--|----------------|----------|
| 17436 | McCormick, J. B. | Harvesting hemp, machines for..... | June 9, 1867 | I. |
| 18399 | McCormick, J. J., and George Croeslingham..... | Painters' stripping instrument..... | Nov. 24, 1867 | XVIII. |
| 17047 | McCurdy, James S. | Bedsteads, wardrobe or bureau..... | April 14, 1867 | XVII. |
| 17438 | McCutcheon, Robert | Churns, atmospheric..... | June 9, 1867 | I. |
| | McDowell & Co. (See Smith and Brown, assignors.) | | | |
| | McDowell & Co. (See Smith and Brown, assignors.) | | | |
| | McDowell & Co. (See Smith and Brown, assignors.) | | | |
| | McDowell & Co. (See Smith, Brown, and Read, assignors.) | | | |
| | McDowell & Co. (See Smith, Brown, and Read, assignors.) | | | |
| 16802 | McElroy, Charles A. | Carriage-springs, arrangement of..... | March 10, 1867 | X. |
| | McFall, Wiler, and Sturges. (See Wiler, Sturges, and McFall.) | | | |
| 17566 | McGaffey, Ives W. | Planters, corn..... | June 16, 1867 | I. |
| 16742 | McGeorge, H. D. | Shingle machine..... | March 3, 1867 | XIV. |
| 18560 | McGhan, Francis | Closets, water..... | Nov. 3, 1867 | IX. |
| 17335 | McGill, George W. | Gate, approach-opening..... | May 19, 1867 | IX. |
| 17885 | McGregor, John | Kilns, lime..... | July 28, 1867 | XV. |
| 16948 | McHenry, John | Gas-burners, construction of..... | March 17, 1867 | V. |
| 16598 | Mellroy, G. R. | Fences adaptable to uneven ground..... | Feb. 10, 1867 | IX. |
| 17227 | Mellroy, George R. | Pocket-safes or fastenings..... | May 5, 1867 | XXI. |
| | McIntire, J. N. (See McCauley, William M., assignor.) | | | |
| 17690 | McIntosh, John | Harvesters, raking attachment for..... | June 30, 1867 | I. |
| 17998 | McKay, Gordon | Printing presses, registering apparatus for..... | May 26, 1867 | XVIII. |
| | McKenney, B., & al. (See Fountain, James L., assignor.) | | | |
| 17106 | McKenzie, A. | Square, mitre-square, and bevel combined..... | April 21, 1867 | XIV. |
| | McKillop, John. (See Harris, Benjamin T., assignor.) | | | |
| 482 | McKinlay, Peter | Hullers, rice..... | Aug. 11, 1867 | Release. |
| 17803 | McLean, Donald | Trap-hook, self-setting..... | July 14, 1867 | XXII. |
| 17938 | McMakin, James | Window-blinds, device for operating..... | Aug. 4, 1867 | IX. |
| 18223 | McMurry, John, assignor to Daniel Wisl. | Sash-balance, cog-gear, mode of controlling..... | Sept. 15, 1867 | IX. |
| 17691 | McNamara, David S. | Harvesters..... | June 30, 1867 | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------------|----------|
| 498 | McNary, William H | Hosiery, manufacture of | Feb. 17, 1857 | Reissue. |
| 18123 | McNish, H. L., assignor to himself and David C. Butler. | Staves, crossing and chamfering, machine for | Sept. 1, 1857 | XIV. |
| 17130 | McNish, Henry L., assignor to H. L. McNish and D. C. Butler. | Stave-machine | April 21, 1857 | XIV. |
| 18884 | McWilliams, Robert, assignor to himself and Adam J. Frederick. | Cars, railroad, journal boxes for | Dec. 15, 1857 | X. |
| 16929 | Meacham, George A. | Planters, seed | Mar. 31, 1857 | I. |
| 17801 | Mears, Henry D., and William Houlton, Jr. | Cars, &c., railroad, freight seal for | July 14, 1857 | X. |
| 17802 | Mears, Henry D., and William Houlton, Jr. | Cars, &c., railroad, freight seal for | July 14, 1857 | X. |
| 18922 | Mefford, David M. | Huskens, corn | Dec. 22, 1857 | I. |
| 17387 | Mellier, M. A., and Charles | Paper-pulp, making | Dec. 26, 1857 | III. |
| 17249 | Mellish, Henry, assignor to Charles Pope | Wooden boxes, cylindrical, cutters for turning | May 5, 1857 | XIV. |
| 16392 | Mendenhall, Stephen C. | Looms, hand | Jan. 13, 1857 | III. |
| | Merkel, P., and Robert Kuschke. (See Kuschke & Merkel.) | | | |
| | Merklein, G. H., and Thomas Floyd. (See Floyd, Thomas, assignor.) | | | |
| 18594 | Merriam, W. W. | Boots and shoes, patterns for cutting out the uppers of | Nov. 10, 1857 | XVI. |
| 16876 | Merrill, Ira. | Stone into regular forms, machine for breaking slabs or blocks of | Mar. 24, 1857 | XV. |
| 18401 | Merrill, James H. | Projectiles for rifled ordnance | Oct. 13, 1857 | XIX. |
| 18855 | Merry, Cornelius | Carriage-wheels, hubs of | Dec. 15, 1857 | X. |
| 19006 | Merryman, John M., assignor to J. M. Merriman and J. H. Jordan. | Paint-compound | Dec. 29, 1857 | IV. |
| 18263 | Messenger, W. F., and Henry Rehahn. | Cooler | Sept. 22, 1857 | XVII. |
| 17048 | Messer, Daniel W. | Cups, molasses | April 14, 1857 | XVII. |
| | Messer, W. W., and George Gray. (See Coburn, Francis S., assignor.) | | | |
| | Messer, William W., and J. Taggart. (See Taggart, John, assignor.) | | | |

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| 17226 | Methven, Daniel and Angus A | Sawing-mills, self-reversing, feed motion for | May 5, 1857..... | XIV. |
| 16692 | Mettam, Charles | Parapets, iron | Feb. 24, 1857..... | IX. |
| 944 | Meyer, Julius, assignor to M. Greenwood & Co. ... | Shovels and tongs, stands to hold. (B) | Sept. 29, 1857..... | Design. |
| 945 | Meyer, Julius, assignor to M. Greenwood & Co. ... | Shovels and tongs, stands to hold. (A) | Sept. 29, 1857..... | Design. |
| 18101 | Meyer, William | Bath, shower, apparatus | Sept. 1, 1857..... | XX. |
| 18920 | Miamay, Eugene | Fuel, artificial | Dec. 22, 1857..... | V. |
| 18921 | Middleton, Samuel | Boots and shoes without seam, manufacture of the uppers of | Sept. 29, 1857..... | XVI. |
| 18464 | Miffliton, Daniel | Grain-craddles | Oct. 20, 1857..... | I. |
| 17608 | Migeon, Henry. (See Mourtier & Valent, assignors.) Mighten & Allcroft. (See Allcroft & Mighten.) Mihau, Patrick, assignor to himself and Robert B. Fitts. | Stoves, gas | June 16, 1857..... | V. |
| 17767 | Mihau, Patrick, assignor to himself and Robert B. Fitts. | Stove, gas | July 7, 1857..... | V. |
| 16741 | Miles, Purches | Curtain-rollers | Mar. 3, 1857..... | XVII. |
| 16989 | Miles, Purches | Curtain fixtures, window | April 7, 1857..... | XVII. |
| 18402 | Miles, Thomas | Sawing given curvatures, device for guiding the logs in | Oct. 13, 1857..... | XIV. |
| 16739 | Milka, Charles R. | Roofing-compounds, mastic | Mar. 3, 1857..... | IX. |
| 17327 | Millar, John C., and C. N. Tyler | Cloth, napping, machinery for | May 5, 1857..... | III. |
| 17440 | Miller, A. C. | Sowing seed broadcast, machines for | June 2, 1857..... | I. |
| 18760 | Miller, David L. | Jacks, lifting | Dec. 1, 1857..... | XII. |
| 17512 | Miller, E. T. | Trees by hand, felling, machine for | June 9, 1857..... | IX. |
| 18347 | Miller, George P., and Hugh Dougherty | Iron, melting and refining | Oct. 6, 1857..... | II. |
| 18759 | Miller, Harvey | Egg-beaters | Dec. 1, 1857..... | XVII. |
| 17607 | Miller, J. H., and J. Kailey, assignors to themselves and John Danner. | Gauges, steam-pressure | June 16, 1857..... | VI. |
| 16930 | Miller, John | Planters, corn | Mar. 31, 1857..... | I. |
| 16651 | Miller, John Q., and J. D. & H. C. Foster. (See Foster, Foster, & Miller.) | Gas-retort | Feb. 17, 1857..... | IV. |
| 18403 | Miller, Michael J. | Carriages, shafts and poles to, mode of fastening | Oct. 13, 1857..... | X. |
| 18349 | Miller, Thomas | Baths, shower, appendages to | Oct. 6, 1857..... | XX. |
| 18349 | Miller, William | | | |
| 18349 | Miller, William, and John C. Davis. (See Davis & Miller) | | | |
| 16601 | Millard, G. B. | India-rubber cloth, preparing | Feb. 10, 1857..... | IV. |
| 16602 | Milligan, Julia M. | Abdominal supporters | Feb. 10, 1857..... | XX. |
| 493 | Milligan, Julia M. | Abdominal supporters | Sept. 16, 1857..... | Release. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|----------|
| 18856 | Mills, Samuel Mills, William, and E. Gomez. (See Gomez & Mills.) | Seeding-machines..... | Dec. 15, 1857..... | I. |
| 17334 | Minder, J. D..... | Sewing-thread, warps, and yarns, machinery for dressing..... | May 19, 1857..... | III. |
| 18645 | Mingay, Edward..... | Pitchers for molasses, &c..... | Nov. 17, 1857..... | XVII. |
| 18614 | Minor, William..... | Bands for cotton-bales, &c., metallic fastening for..... | Oct. 27, 1857..... | XII. |
| 18743 | Minott, Sawin, & Goodspeed. (See Sawin, Goodspeed, & Minott.) | Types, composing, machines for..... | Mar. 3, 1857..... | XVIII. |
| 18264 | Mitchel, William H..... | Types, distributing, machine for..... | Sept. 22, 1857..... | XVIII. |
| 17384 | Mitchell, William H..... | Wind-wheel..... | May 26, 1857..... | XI. |
| 18018 | Mitchell, James..... | Car-brake, railroad..... | Aug. 18, 1857..... | X. |
| 18348 | Mitchell, James..... | Locomotives, cow-catcher for..... | Oct. 6, 1857..... | VI. |
| 18404 | Mitchell, James..... | Digging-machine..... | Oct. 13, 1857..... | IX. |
| 17631 | Mitchell, Thomas..... | Brush-handles, machine for finishing..... | June 23, 1857..... | XVII. |
| 17441 | Mitchell, V. N..... | Horses' hoods, pating, implement for..... | June 2, 1857..... | II. |
| 18292 | Mix, E. M. and J. E..... | Burglars' alarms..... | Sept. 29, 1857..... | XXII. |
| 18612 | Mix, G. J..... | Spoons, iron, making..... | Oct. 27, 1857..... | XVII. |
| 480 | Mix, William, assignor to Charles Parker..... | Spoons, wire-strengthened, method of making..... | Aug. 4, 1857..... | Reissue. |
| 17581 | Mobley, Edward M., and J. H. Heyser. (See Heyser & Mobley.) | Sowing grain in drills, machines for..... | June 16, 1857..... | I. |
| 18586 | Moshman, Frederick..... | Ploughing-machines..... | Nov. 10, 1857..... | I. |
| 18761 | Mooser, Henry..... | Grain-separators..... | Dec. 1, 1857..... | XIII. |
| 17336 | Moffitt, John E..... | Ores, zinc, apparatus for reducing..... | May 19, 1857..... | II. |
| 17976 | Monnier, Alfred..... | Acid, sulphuric, manufacture of..... | Aug. 11, 1857..... | IV. |
| 502 | Monnier, Alfred..... | Retort, construction of a..... | Oct. 6, 1857..... | Reissue. |
| 17011 | Monnier, Alfred, assignor to himself and Isaac Gattman..... | Retort, construction of a..... | April 7, 1857..... | IV. |
| 16628 | Moorce, Edwin P., assignor to Gilbert H. Scribner..... | Clocks, calendar..... | Feb. 10, 1857..... | VIII. |
| 18154 | Monson, Charles..... | Gas-tubes, extension..... | Sept. 8, 1857..... | IV. |

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|-------|---|--|--------------------|--------------|
| 16447 | Montgomery, Joseph and James..... | Winnowing-machines..... | Jan. 20, 1857..... | VIII. |
| 16796 | Moody, James S., assignor to T. F. and J. F. Randolph..... | Printing-machine, card..... | Dec. 1, 1857..... | |
| 16931 | Moore, Wolf & Co. (See Smith & Brown, assignors.)..... | | | XIV. |
| 16932 | Moore, A. C..... | Bits in their stocks, mode of securing..... | Mar. 31, 1857..... | XIV. |
| | Moore, Albert..... | Hubs while being bored, centering and holding method of..... | Mar. 31, 1857..... | |
| 16933 | Moore, Charles..... | Sewing-machines..... | Dec. 8, 1857..... | III. |
| 16951 | Moore, G. H..... | Excavators, rotary..... | Nov. 3, 1857..... | IX. |
| 16943 | Moore, George R., assignor to himself and Charles G. Sargent..... | Sawing-machines, cross-cut..... | Dec. 22, 1857..... | XIV. |
| 17693 | Moore, J. A., and A. H. Patch..... | Mowers and reapers combined, frame for..... | June 30, 1857..... | I. |
| 17693 | Moore, James..... | Fence..... | June 30, 1857..... | IX. |
| | Morgan & Smith. (See Rice, Benjamin F.)..... | | | |
| | Morgan & Thompson. (See Thompson, W. H., and E. P. Morgan.)..... | | | |
| | Morgan & Withrell. (See Withrell & Morgan.)..... | | | |
| 17908 | Morgan, A. E., assignor to himself, D. Todd, and John B. Weddle..... | Latch, gate..... | July 28, 1857..... | II. |
| | Morgan, Dayton S., & al. (See Seymour, William H., assignor.)..... | | | |
| | Morgan, Dayton S., & al. (See Seymour, William H., assignor.)..... | | | |
| | Morgan, Dayton S., & al. (See Seymour, William H., assignor.)..... | | | |
| 16448 | Morgan, James G..... | Hydrant..... | Jan. 20, 1857..... | XI. |
| 16933 | Morgan, John E..... | Harrows..... | Mar. | I. |
| | Morgan, Peter U. (See Arnold, C., and P. U. Morgan, administrators,)..... | | | |
| | Morrill, James A., and S. K. Lighter. (See Lighter & Morrill.)..... | | | |
| | Morrill, Jacob, & al. (See Shattuck, David, assignor.)..... | | | |
| 18465 | Morrill, Oscar F..... | Burner, air and vapor..... | Oct. 20, 1857..... | V. |
| 16903 | Morris, Edward..... | Pumps, chain..... | Feb. 10, 1857..... | XI. |
| 16338 | Morris, Evan..... | Hats..... | Jan. 6, 1857..... | III. |
| 18923 | Morrison, J. R..... | Mill, grinding..... | Dec. 22, 1857..... | XIII. |
| 16393 | Morrison, Robert J..... | Harvesting-machines, cutting-apparatus for..... | Jan. 13, 1857..... | I. |
| 158 | Morrison, Robert J..... | Harvesting-machines..... | Jan. 20, 1857..... | Add'l imp't. |



Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 17514 | Morrison, William | Fence, portable..... | June 9, 1857..... | IX. |
| 17066 | Morrow, John H., assignor to himself and Edwin Bennett. | Photographic purposes, baths for..... | April 14, 1857..... | XVIII. |
| 17513 | Morse, Albert W. | Doors, hanging, mode of..... | June 9, 1857..... | IX. |
| 17543 | Morse, Jedediah, assignor to Ruggles Power Press Manufacturing Company. | Printing-presses, power..... | June 9, 1857..... | XVIII. |
| 18527 | Morse, Jedediah, assignor to Ruggles Power Press Manufacturing Company. | Printing-presses, hand..... | Oct. 27, 1857..... | XVIII. |
| 18700 | Morton, John W. | Corn-shellers..... | Nov. 24, 1857..... | I. |
| 16572 | Moseley, Thomas W. H. | Bridge..... | Feb. 3, 1857..... | IX. |
| 18593 | Moss, Lucien. | Fire-plugs..... | Nov. 10, 1857..... | XI. |
| 17167 | Motley, Thomas. | Letters for signs, &c., mode of constructing..... | April 28, 1857..... | XVIII. |
| 431 | Mott, J. L. | Caldron and furnace combined, mode of constructing a, for the use of agriculturists and others. | Feb. 24, 1857..... | Reissue. |
| 18722 | Mott, Jordan L., and William Tabele, assignors to the J. L. Mott Iron Works. | Chairs, rotary..... | Nov. 24, 1857..... | XVII. |
| 18054 | Moultrie, William. | Furnaces, hot-air, water vessels for imparting humidity to hot-air and vapor draught to the grate bars of. | Aug. 25, 1857..... | V. |
| 16771 | Mourier, E., and T. F. E. Vallery, assignors to Henry Migeon. | Alloys, fluxes for treating..... | Mar. 3, 1857..... | IV |
| 17442 | Mowry, Samuel. (See Wells, Parker, assignor.) | Car-wheels, cast iron..... | June 2, 1857..... | X. |
| 17290 | Muckelt, Robert, and William Rigby | Engraving cylinders, machine for..... | May 12, 1857..... | XVIII. |
| 950 | Muller, Nicholas, (A) | Clock-fronts..... | Oct. 13, 1857..... | Design. |
| 951 | Muller, Nicholas, (B) | Clock-fronts..... | Oct. 13, 1857..... | Design. |
| 16589 | Mulley, Jeremiah W. | Reaping and mowing machines..... | Feb. 10, 1857..... | I. |
| 18993 | Mumma, Jacob. | Seed-drills..... | Dec. 29, 1857..... | I. |
| 16849 | Munck, Valentine. | Staves, tapering, machine for planing..... | Mar. 17, 1857..... | XIV. |
| 17802 | Munger, L. F. (See Fournier & Hlman, assignors.) | Locks..... | July 14, 1857..... | II. |

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|-------|--|--|---------------------|--------------|
| 17337 | Murdoch, Richard..... | Carriages, running gear of | May 19, 1857..... | X. |
| 17381 | Marinetti, Antoine..... | Powder, blasting..... | May 19, 1857..... | IV. |
| 17389 | Musket, Robert..... | Iron and steel, manufacture of..... | May 26, 1857..... | II. |
| 16772 | Myers, Lewis B. and Henry A., assignors to themselves and Isaac Myers. | Seeding-machines | Mar. 3, 1857..... | I. |
| | Mydersen, Sloby, & Shoemaker. (See Holly, Birdsell, assignor.) | | | |
| | Nashawannuck Manufacturing Co. (See Painter, Franklin, assignor.) | | | |
| | Nashawannuck Manufacturing Co. (See Gee, William V.) | | | |
| 18857 | Nathans, Horace A..... | Flexomanus..... | Dec. 15, 1857..... | XVIII. |
| 18283 | Naughten, James..... | Water, oily matter from, apparatus for separating .. | Sept. 28, 1857..... | XI. |
| 18597 | Naughten, James..... | Bread, machine for cutting..... | Nov. 10, 1857..... | XVII. |
| 16449 | Nave, B. F..... | Brick-machines | Jan. 20, 1857..... | XV. |
| 16762 | Neal, Daniel B..... | Planters, seed..... | Dec. 1, 1857..... | I. |
| | Neal, Daniel B., and B. H. Pearson. (See Pearson & Neal) | | | |
| 18224 | Near, Jasper J., assignor to Near & Vandusen..... | Saw-filer..... | Sept. 15, 1857..... | II. |
| 18224 | Needham, A. A..... | Casting car-wheels..... | Dec. 22, 1857..... | II. |
| 16361 | Needham, O. H..... | Milking-shields | Jan. 6, 1857..... | XX. |
| 16548 | Needham, Otis, & Wales..... | Walls, pisé work, boxes for | Feb. 3, 1857..... | IX. |
| 17976 | Needham, William, and James Kite..... | Press, filtration, for expressing liquids from substances..... | Aug. 11, 1857..... | XII. |
| 18246 | Neil, James..... | Saddles, riding, stirrups for..... | Sept. 22, 1857..... | XVI. |
| 16863 | Nelson, Israel P., assignor to Israel P. Nelson and George N. Davis. | Fireman's mask and respirator..... | Mar. 17, 1857..... | XXII. |
| 17109 | Nelson, Mortimer..... | Casting, moulds for | April 21, 1857..... | II. |
| 16763 | Nesen, Joseph E..... | Drills, rock | Dec. 1, 1857..... | IX. |
| 15350 | Nettleton, W. H., and Charles Raymond..... | Sewing-machines..... | Oct. 6, 1857..... | III. |
| 18561 | Nettleton, W. H., Charles Raymond, and A. Hatch, assignors to W. H. Nettleton. | Clock-movements, machine for turning pillars for..... | Nov. 17, 1857..... | VIII. |
| 17049 | Nettleton, Willford H., and Charles Raymond, assignors to Henry E. Fickett. | Sewing-machine | April 14, 1857..... | III. |
| | Newberry, Filley, & Co. (See Vedder, N. S., assignor.) | | | |
| 171 | Newbury, Frederick D..... | Fire-arms..... | July 14, 1857..... | Add'l imp't. |
| 16629 | Newbury, Frederick D., assignor to R. V. De Witt, jr. | Bulleets, patching, mode of..... | Feb. 10, 1857..... | XIX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee | Invention or discovery. | Date. | Class. |
|-------|--|---|----------------|--------------|
| 161 | Newbury, F. D., assignor to E. V. De Witt, jr. | Fire-arms. | Mar. 31, 1857 | Add'l Imp't. |
| 16903 | Newbury, Thompson | Screws, cutting, machine for | Mar. 10, 1857 | II. |
| 18552 | Newell, William | Coffee, cleaning and polishing, method of | Nov. 3, 1857 | XXII. |
| 18764 | Newkirk, Jacob | Kilns, lime | Dec. 1, 1857 | XV. |
| | Newman, J. H., and E. Kennedy, & al. (See Freeman & Farley, assignors) | | | |
| 16990 | Newman, Joseph | Piano-fortes, sound-board of | April 7, 1857 | XVIII. |
| 18351 | Newman, Nelson | Sod-cutters | Oct. 6, 1857 | I. |
| 18046 | Newton, Alexander S. | Wooden boxes, turning, machine for | Nov. 17, 1857 | XIV. |
| 16904 | Newton, Daniel | Metal, sheet, roller for bending | Mar. 10, 1857 | II. |
| | Newton, L. W., and H. S. Dewey. (See Henry S. Dewey, assignor) | | | |
| 17987 | Newton, Orrin | Door-knobs, spindle for | July 28, 1857 | II. |
| 18334 | Newton, Orrin | Spikes | Sept. 28, 1857 | II. |
| | Newton, Reuben, and John C. Cox. (See Cox & Newton) | | | |
| | New York and Brooklyn Brass Co. (See Cannon, Mary Ann.) | | | |
| | New York Wire Railing Company. (See Jenkins, Henry, assignor.) | | | |
| | New York Wrought Iron Railroad Chair Co. (See Cox, Samuel A., assignor to Sawyer & Hall, assignors.) | | | |
| 17988 | Nicholas R. H., and Douglass Bly | Legs, artificial | July 28, 1857 | XX. |
| | Nicholas, Jacob, jr., and W. H. Skinner. (See Skinner, Smith, assignor) | | | |
| 16549 | Nichols, James R. | Soda fountains, apparatus for containing and dispensing syrups for. | Feb. 3, 1857 | XXII. |
| 16906 | Nichols, Oldin | Plane, carpenter's | Mar. 10, 1857 | XIV. |
| 423 | Nichols, William E. | Cord-making, machine for | Jan. 29, 1857 | Reissue. |
| 17444 | Nicholson, Henry C. | Churns | June 2, 1857 | I. |

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| 17339 | Nicol, Andrew | Water, raising, apparatus for, valvular arrangement in. | May 19, 1857. | IX. |
| 16605 | Nicolson, Samuel..... | Rail for street railroads | Feb. 10, 1857. | IX. |
| 17664 | Niles, Peter H., assignor to himself and Alfred Douglas, jr. | Water-metre | June 23, 1857. | XI. |
| 16705 | Niles, Peter H., assignor to himself, N. Hunt, R. C. Webster, and A. Douglas, jr. | Turning tapering sticks, device to operate the mandrel cutters in. | Feb. 24, 1857. | XIV. |
| 17110 | Nippes, Albert S. | Saws, grinding | April 21, 1857. | XIV. |
| 17977 | Norcross, James W. & Nordyke, Wiggins, & Strawbridge. (See Wiggins & Nordyke, &c.) | Sails, top-reefing | Aug. 11, 1857. | VII. |
| 18465 | Nordyke, E. and A. H. | Caster and fan, automatic | Oct. 20, 1857. | XVII. |
| 18984 | Norris, James A. | Cars, &c., railroad, journal boxes for | Dec. 29, 1857. | X. |
| 18701 | Norris, Robert, and Frederick Peters | Pendulum-quadrant | Nov. 24, 1857. | VIII. |
| 18467 | Norris, William George | Boilers, steam | Oct. 20, 1857. | VI. |
| 17050 | North, Chase, & North. (See Vedder, N. S., assignor.) | | | |
| 464 | North, Chase, & North. (See Vedder, N. S., assignor.) | | | |
| 17050 | North, Chase, & North. (See Vedder, N. S., assignor.) | | | |
| 464 | North, John | Paper, drying and pressing, machine for | April 14, 1857. | III. |
| | North, John | Paper, drying and pressing, machine for | May 19, 1857. | Release. |
| | North, Reuben, and John Wood. (See Wood & North.) | | | |
| | Norton, Treadwell, & Perry. (See Pratt, Samuel F., assignor.) | | | |
| 17445 | Norton, E. L. | Leather shoe-binding, manufacturing | June 2, 1857. | XVI. |
| 17747 | Norton, M. P. | Locks, sash | July 7, 1857. | II. |
| | Norton, Samuel, and Robert Cook. (See Cook, Robert, assignor.) | | | |
| | Noyes & Remson. (See Remson, Henry R., assignor.) | | | |
| 18698 | Nute, Andrew T. | Trees, mode of protecting, from canker worms, &c. | Nov. 10, 1857. | I. |
| 16804 | Nutting, Mighill | Boilers, steam, gauges and water regulators for | Feb. 10, 1857. | VI. |
| 17168 | Nutting, Rufus | Wind-mill | April 28, 1857. | XI. |
| 17805 | Nutting, Rufus | Carrriages, mode of constructing | July 14, 1857. | X. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|-----------|
| 18885 | O'Brien, John, assignor to Owen Collins and John Dunley. | Dampers, grate | Dec. 15, 1857..... | V. |
| 18395 | Odion, Thomas | Fire, buildings from, apparatus to protect | July 28, 1857..... | XXII, IX. |
| 17909 | Ogborn, Harrison, and George Taylor, assignors to Harrison Ogborn. | Cultivators | July 28, 1857..... | I. |
| 16493 | Okey, Joseph B. | Lath-machine | Jan. 27, 1857..... | XIV. |
| 18985 | Olde, Franklin | Mills, grinding..... | Dec. 20, 1857..... | XIII. |
| 18991 | Oldendorf, G. J., E. R. Tripp, and S. Harper. | Jack, trimming | April 7, 1857..... | II. |
| 17694 | Oliver, James, and Henry Little | Chilling plough-shares | June 30, 1857..... | II. |
| 17051 | Oliver, Stephen, jr. | Boat and shoe heels | April 7, 1857..... | XVI. |
| 18599 | Olmestead, Kingsley R. | Tanning mill, lateral feed motion for | Nov. 10, 1857..... | XVI. |
| 17979 | O'Neill, John K. | Bathing apparatus | Aug. 11, 1857..... | XX. |
| 17052 | Oram, Zachariah | Boats, ice-breaking..... | April 14, 1857..... | VII. |
| 16706 | Ordway, John M., assignor to Roxbury Color and Chemical Manufactory. | Silicates, alkaline, preparing | Feb. 24, 1857..... | IV. |
| 16879 | O'Reilly, Philip | Acid, nitric, apparatus for making..... | Mar. 24, 1857..... | IV. |
| 17476 | Ormistoun, John, assignor to D. N. Allard | Ploughs | June 2, 1857..... | I. |
| 16394 | Ornaby, Waterman L. | Wood, splitting, machine for | April 28, 1857..... | XIV. |
| 16394 | Orr, James F. | Cotton-gins | Jan. 13, 1857..... | III. |
| 16550 | Orr, James F. | Planters, cotton-seed..... | Feb. 3, 1857..... | I. |
| 427 | Osborn, Levi, and William Halliwell. (See Halliwell & Osborn.) | Bonnets and bonnet-frames, machines for pressing.. | Feb. 17, 1857..... | Release. |
| 16652 | Osborn, William | Excavating rock, machinery for | Feb. 17, 1857..... | IX. |
| 16992 | Osgood, Jason C. | Vessels, &c., hawse-holes, for | April 7, 1857..... | VII. |
| 17928 | Osgood, Robert R., assignor to J. C. Osgood..... | Ships' hawse-holes | May 5, 1857..... | VII. |
| 16395 | Ostrander, William | Tubes, tapering, machines for rolling..... | Jan. 13, 1857..... | II. |
| 18468 | Otis, E. Graves | Plough, steam..... | Oct. 30, 1857..... | I. |
| | Otis, George W., and A. J. Smith. (See Smith, Amos J., assignor.) | | | |

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|-------|--|---|---------------------|----------|
| 17111 | Pachard, Manley | Spoke-shaves, knives of, method of adjusting and holding the. | April 21, 1857..... | XIV. |
| 17889 | Page, C. D. | Kilns, lime..... | July 28, 1857..... | XV. |
| 17808 | Page, Charles G..... | Door-bolts, cylindrical-locking..... | July 14, 1857..... | II. |
| 17843 | Page, Charles G..... | Door-bolts, cylindrical..... | July 21, 1857..... | II. |
| 16846 | Page, Ezekiel..... | Sawing-machines, arrangement of devices for suspending and adjusting sticks in. | Feb. 10, 1857..... | XIV. |
| 17859 | Page, H. W. (See Waymoth, A. D., assignor.) | Spark-arresters | July 21, 1857..... | VI. |
| 18356 | Page, Thomas B | Fence, field, portable..... | Dec. 15, 1857..... | IX. |
| 18765 | Paige, W. P., and Edward F. Hodges. (See Campbell, Ethan, assignor.) | Seeding-machines | Dec. 1, 1857..... | I. |
| 18515 | Paige, David O., and John Clary | Car-springs, railroad | Oct. 27, 1857..... | X. |
| 17799 | Paine, Henry M..... | Boring-machines, mortise, device for feeding the cutter intermittently in. | July 14, 1857..... | XIV. |
| 17404 | Paine, Hiram E..... | Looms | May 28, 1857..... | III. |
| 17446 | Painter, Franklin, assignor to the Nashawannuck Manufacturing Co. | Mill-stones, feeding grain to | June 2, 1857..... | XIII. |
| 16509 | Painter, M. & C | Plane, joiner's..... | Feb. 3, 1857..... | XIV. |
| 16693 | Palmer, J. F., assignor to S. W. Palmer..... | Boilers, steam..... | Feb. 24, 1857..... | VI. |
| 18986 | Palmer, Jason J | Pumps, rotary..... | Dec. 29, 1857..... | XI. |
| 18209 | Palmer, Oliver..... | Tracing-muslin, composition for preparing..... | Sept. 15, 1857..... | XVIII. |
| 16752 | Park, Jesse K..... | Tin pans, manufacture of..... | Mar. 3, 1857..... | XVII. |
| 499 | Parker, Charles. (See Mix, William, assignor.) | Clothes-pins, machine for making..... | Feb. 17, 1857..... | Release. |
| 16993 | Parker, E. F., and J. Smead..... | Apples, paring, machines for | April 7, 1857..... | XVII. |
| 18286 | Parker, George W | Coru-shellers..... | Sept. 29, 1857..... | I. |
| 16396 | Parker, J. J..... | Nipple-shield..... | Jan. 13, 1857..... | XX. |
| 16744 | Parker, James..... | Card-cylinders, machine for grinding | Mar. 3, 1857..... | III. |
| 17994 | Parker, Jonathan..... | Lancets, spring..... | Aug. 11, 1857..... | XX. |
| 17390 | Parker, R. J., & al. (See Hinman & Fournier, assignors.) | Brick machines..... | May 26, 1857..... | XV. |
| 17994 | Parkinson, William, deceased, J. T. Martin, administrator of | | | |
| 17390 | Parks, Stephen..... | | | |
| 17390 | Parlange, Charles. (See Bour, Joseph, assignor.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|----------|
| 16607 | Parsons, Lewis H. (See Wood, S. W., assignor.) | Stoves, ventilating..... | Feb. 10, 1857..... | V. |
| 16494 | Parsons, Luther M..... | Presses, cotton..... | Jan. 27, 1857..... | XII. |
| 17447 | Partz, August F. W..... | Hydraulic blast-generator..... | June 2, 1857..... | XI. |
| 17448 | Partz, August F. W..... | Vapor and gases, apparatus for condensing, and for evaporating liquids..... | June 2, 1857..... | IV. |
| 17611 | Patch, A. H. and J. A. Moore. (See Moore & Patch.) | Locks and latches, keeper for..... | June 16, 1857..... | II. |
| 18405 | Patterson, Andrew, assignor to J. H. Jones..... | Harvesters..... | Oct. 18, 1857..... | I. |
| 18155 | Patterson, N. A..... | Lock, sash..... | Sept. 8, 1857..... | II. |
| 18406 | Paul, Joseph..... | Ore-washer..... | Oct. 13, 1857..... | II. |
| 18156 | Paye, Edward, and Samuel Hall..... | Nuts, forging, machines for..... | Sept. 8, 1857..... | IX. |
| 18703 | Payson, Joseph R..... | Sash-balance, arrangement in..... | Nov. 24, 1857..... | XI. |
| 18210 | Peabody, Francis..... | Wind wheels, velocity of, method of regulating the..... | Sept. 15, 1857..... | XXI. |
| 18247 | Peacock, David C..... | Sleeve-fastener..... | Sept. 22, 1857..... | XXI. |
| 504 | Peatee, Henry..... | Cordage machinery..... | Nov. 3, 1857..... | Release. |
| 17114 | Pearce, William, and John Lowrie..... | Cars, railroad, mode of dumping..... | April 21, 1857..... | X. |
| 18407 | Pearson, Benjamin H., and Daniel B. Neal..... | Washing-machines..... | Oct. 13, 1857..... | XVII. |
| 17392 | Pearson, Charles F..... | Bench-strip, joiners..... | Oct. 12, 1857..... | XIV. |
| 18486 | Pease, Henry, assignor to Eckler, Buswell, & Co..... | Pumps, rotary..... | Oct. 20, 1857..... | XI. |
| 17768 | Pease, H., assignor to himself, Eckler, Buswell, & Co. Pecare, J., and A. F. Chatman. (See Chatman, Alfred F., assignor.) | Pumps..... | July 7, 1857..... | XI. |
| 18957 | Peck, Charles A..... | Door-springs..... | Dec. 29, 1857..... | II. |
| 18600 | Peck, Ezra..... | Ploughs, digging..... | Nov. 10, 1857..... | I. |
| 17411 | Peck, Geo. M., and E. Butler. (See Butler & Peck.) | Presses, drop..... | May 26, 1857..... | XII. |
| 18647 | Peck, Milo..... | Cake-cutter..... | Nov. 17, 1857..... | XVII. |
| | Peckham, George R..... | | | |
| | Peckham, George, and J. G. Wolvin. (See Wolvin, John G., assignor.) | | | |
| | Peckham, John S., and Merritt. (See Vedder, N. S., assignor.) | | | |

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|-------|--|--|---------------------|------------|
| 17633 | Perry, Joseph, and A. Sanborn..... | Ships' windlasses..... | June 23, 1857..... | VII. |
| 18533 | Ponberthy, Samuel..... | Tires, method of expanding..... | Nov. 3, 1857..... | II. |
| 18311 | Pennington, John C..... | Valve-gear for oscillating steam-engines..... | Sept. 15, 1857..... | VI. |
| 18786 | Pennington, G. W..... | Presses, cotton and hay..... | Dec. 1, 1857..... | XII. |
| 17053 | Pennington, George W..... | Presses, cotton, self-releasing doors of..... | April 14, 1857..... | XII. |
| 18937 | Penneck, Samuel, assignor to himself and M. Pen- rock | Harvesters..... | Sept. 22, 1857..... | I. |
| 17890 | Penrose, Washington H..... | Carpets, fastenings for..... | July 28, 1857..... | XVII. |
| 17592 | Pepper, William T..... | Planters, corn..... | June 13, 1857..... | I. |
| 18408 | Perkins, Russell B..... | Hammers, machine for making..... | Oct. 16, 1857..... | II. |
| 18617 | Perkins, Russell B..... | Spoons, iron, making..... | Oct. 27, 1857..... | XVII. |
| 18551 | Perkins, Samuel M..... | Planters, corn..... | Feb. 3, 1857..... | I. |
| 17940 | Perley, Charles..... | Ships, compound capstans for..... | Aug. 4, 1857..... | VII. |
| 17632 | Perrin, George F., and James E. Boyle..... | Hydrants..... | June 23, 1857..... | XI. |
| | Perry, Norton, and Treadwell. (See Pratt, Samuel F., assignor.) | | | |
| | Perry, Amos E., & al. (See Humphrey, John, assignor.) | | | |
| 18925 | Perry, Horatio O..... | Valves of steam-engines, giving motion to..... | Dec. 22, 1857..... | VI. |
| 17610 | Perry, John W., assignor to James W. Gates..... | Preparing liquid rose-pink..... | June 16, 1857..... | IV. |
| 18019 | Perry, Julius..... | Metal plates, machine for bending..... | Aug. 18, 1857..... | II. |
| 18516 | Perry, Philander..... | Brake, railroad, operating..... | Oct. 27, 1857..... | X. |
| | Perry, Samuel M., and Abraham Costes. (See Costes & Perry.) | | | |
| 17293 | Perry, Stuart..... | Locks..... | May 12, 1857..... | II. |
| 17939 | Perry, Stuart..... | Key..... | Aug. 4, 1857..... | II. |
| 18157 | Perry, Stuart..... | Belt for safes..... | Sept. 8, 1857..... | II. |
| | Peters, Frederick, and Robert Norris. (See Norris & Peters.) | | | |
| 17980 | Peters, Jacob..... | Sausage-cutters..... | Aug. 11, 1857..... | XVII. |
| | Peterson, Cresson, & Stuart. (See Beesley & Delany, assignors.) | | | |
| | Peterson, Cresson, & Stuart. (See Beesley & Delany, assignors.) | | | |
| 18926 | Pevay, Abel..... | Gas-retorts, casting..... | Dec. 23, 1857..... | IV. |
| 17054 | Pfaff, John..... | Flutes..... | April 14, 1857..... | XVIII. |
| 18767 | Phelan, Michael..... | Car-wheels, railroad..... | Dec. 1, 1857..... | X. |
| 18927 | Phelps, George M..... | Governors for machinery..... | Dec. 23, 1857..... | XIII. |
| | Phelps, James..... | Washing-machines for cleaning rags..... | Nov. 9, 1857..... | Extension. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|-----------------|--------|
| 18102 | Phelps, Oron C. | Sewing-machines. | Sept. 1, 1857. | III. |
| 17683 | Phillips, Benjamin L. | Valve connexions for steam-engines. | June 16, 1857. | VI. |
| 17844 | Phillips, G. B. | Wrench, hand. | July 21, 1857. | II. |
| 17515 | Phillips, Henry A. | Watch and locket rime, constructing. | June 9, 1857. | XVIII. |
| 18702 | Phillips, J. H. | Cheese, curing and storing, shelving for. | Nov. 21, 1857. | I. |
| 16450 | Phillips, L. D. | Hose-coupling. | Jan. 20, 1857. | XI. |
| 18980 | Phillips, L. D. | Grain, binding, machine for. | Dec. 29, 1857. | I. |
| | Phinney, George H., and William H. Walton. (See Walton & Phinney.) | | | |
| 17807 | Phleger, Leonard | Kilns, lime. | July 14, 1857. | XV. |
| 16451 | Pichler, Emil R. | Vaults, reflectors for. | Jan. 20, 1857. | IX. |
| 10653 | Pickford, Henry | Skates, fastening, mode of. | Feb. 17, 1857. | XXII. |
| | Pickford, Henry, and W. Whiting. (See Whiting & Pickford.) | | | |
| 17635 | Pierce, Edward | Enamelling iron-pipes and hollow-ware. | June 23, 1857. | IV. |
| 17634 | Pierce, Hiram | Knife-blades, machine for straightening. | June 23, 1857. | II. |
| 18602 | Pierce, J. R., and L. B. Austin | Lantern, signal. | Nov. 10, 1857. | V. |
| 18055 | Pierce, Samuel | Ranges, cooking. | Aug. 25, 1857. | V. |
| 18297 | Pierce, Samuel | Stoves, cooking, ranges, &c., apparatus for roast- ing on. | Sept. 29, 1857. | V. |
| | Pierce, Samuel | Stoves, cooking. | Dec. 15, 1857. | V. |
| 18859 | Pike, William G., and Isaac R. Scott | Boiler-furnaces, steam, safety apparatus for regu- lating. | June 23, 1857. | VI. |
| 17229 | Pinder, Charles | Wrenches. | May 5, 1857. | II. |
| 16694 | Pine, James | Cordage-machines | Feb. 24, 1857. | III. |
| 16552 | Pine, Robert G. | File-blanks, grinding, machine for. | Feb. 3, 1857. | II. |
| | Pinney, Aaron. (See Clark, Oliver, assignor.) | | | |
| 18158 | Pinney, Abner H. | Seythe-snathes. | Sept. 8, 1857. | I. |
| 16746 | Pitman, Erasmus M. | Staves, bevelling and jointing, machine for. | Mar. 3, 1857. | XIV. |
| 18843 | Pitt, Thomas J. | Gas-metre indicator. | Nov. 17, 1857. | IV. |
| 16768 | Pitta, Fountain E. | Fire-places and grates, back-plates for. | Mar. 3, 1857. | V. |

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|-------|--|--|---|--|
| 17801 | Platted, Charles C..... | Bit-brace for boring obliquely to the axis of the stock..... | July 28, 1867..... | XIV. |
| 16630 | Platt, Lewis C. (See Tripp, Leemon A., assignor.) Platt, William S., assignor to W. S. Alfred and Clark M. Platt. Platta, Hervey, and Wait T. Huntington. (See Atkins & Burritt, assignors.) Plumer, William..... Polina, Peter. (See Gale, William S., assignor.) Polaton, Philip..... Pollock, Allan..... Pollock, David..... Pomeroy, E. G..... Pomeroy, Norman W..... Pomroy, Josiah B..... | Tube, seamless, making..... Drilling-machine, rock-cutting and..... Pottery-ware, machines for manufacturing..... Gas-generators..... Ore-cleaner..... Process of coating iron..... Lubricator..... Saws, circular, method of adjusting to any required dial..... Steam, generating..... Paper-rolling machines..... Washing-machines..... Vessels, sunken, mode of raising..... Coal-cracker..... | Feb. 10, 1867..... Oct. 6, 1867..... Sept. 29, 1867..... Aug. 11, 1867..... Jan. 27, 1867..... Oct. 13, 1867..... Feb. 3, 1867..... Jan. 6, 1867..... Mar. 3, 1867..... April 8, 1867..... April 21, 1867..... July 28, 1867..... May 12, 1867..... | II. IX. XV. IV. II. IV. XII. XIV. |
| 16747 | Pond, Charles F..... | Knives, table, making..... | Mar. 31, 1867..... | II. |
| 16994 | Pond, Charles L..... | India rubber, devulcanizing..... | May 12, 1867..... | IV. |
| 17113 | Pond, Joseph F., and Charles L..... | Bit-brace..... | July 7, 1867..... | XIV. |
| 17892 | Ponton, John..... | Elevators, extension..... | Oct. 6, 1867..... | XII. |
| 17294 | Poore, Townsend..... | Weighing-machines, automatic grain, buckets of..... | May 5, 1867..... | XII. |
| | Poorman & Campbell. (See Campbell & Poorman.) Pope, Charles (See Mellish, Henry, assignor.) Poppenhusen, Conrad, and C. F. E. Simon, assignors to Conrad Poppenhusen. Porter, Henry W., assignor to Samuel G. Porter..... Porter, P..... Porter, Rufus..... Porter, Rufus..... Porter, S. D. (See Mayfield, W. D., assignor.) Porter, S. D., W. A. Clark, and W. D. Simpson. (See Clark, Porter, & Simpson.) Potter, Charles, jr..... Potta, Albert..... Potta, Albert..... Potta, Albert..... Power, Thomas E..... | Weighing-machine, grain, automatic..... Printing-presses, oscillating..... Battery, centrifugal..... Cars, railway, safety-tops for..... Signals for steamboats..... Piso-forte, bridge..... | Dec. 22, 1867..... June 2, 1867..... May 19, 1867..... Aug. 11, 1867..... Sept. 8, 1867..... May 12, 1867..... | Reissue. XVIII. XIX. X. VIII. XVIII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|-----------------|----------|
| 18103 | Powers, John H. | Gas-regulators. | Sept. 1, 1857. | IV. |
| 17806 | Pratt, Daniel | Cotton-gins | July 14, 1857. | III. |
| | Pratt, J. R., and J. B. Holmes. (See Holmes, John B., assignor.) | | | |
| 16934 | Pratt, John R. (See Holmes, John B., assignor.) | Yarn for dyeing and scouring, preparing | Mar. 31, 1857. | III. |
| 16745 | Pratt, Lucien E. | Sewing-machine | Mar. 3, 1857. | III. |
| 16554 | Pratt, S. F. | Sewing-machines | Feb. 3, 1857. | III. |
| 864 | Pratt, Samuel F. | Stove, parlor | Jan. 13, 1857. | Design. |
| | Pratt, Samuel F., assignor to Treadwell, Perry, & Norton. | | | |
| 18704 | Pratt, William | Lamps, safety | Nov. 24, 1857. | V. |
| 18601 | Prendergast, John | Harness-buckles | Nov. 10, 1857. | XVI. |
| 18248 | Prentiss, George A. | Axles with friction rollers, journals of | Sept. 22, 1857. | X. |
| 18410 | Prescott, Jedediah | Cotton-gin feeders | Oct. 13, 1857. | III. |
| | President and Directors of Maryland Portable Gas Company. (See Bruce, James A., assignor.) | | | |
| 18056 | Preteck, Paul | Printing, photo-galvano-graphic, process for | Aug. 25, 1857. | XVII. |
| 16654 | Price, Joshua C. | Car-coupling, railroad, self-disengaging | Feb. 17, 1857. | X. |
| 17231 | Price, Robert | Photographic grounds for wood engravings, varnish to prepare. | May 5, 1857. | XVIII. |
| | | Washing-machine | Oct. 27, 1857. | XVII. |
| 18578 | Price, Thomas J. | Planters, corn | Dec. 1, 1857. | I. |
| 18768 | Prime, Bradley L. | Saw-mill, portable | Dec. 16, 1857. | XIV. |
| 18860 | Prosser, T. T. | Condensers, surface | Dec. 16, 1857. | VI. |
| 18861 | Prosser, Thomas | Car-coupling, railroad | July 21, 1857. | X. |
| 17845 | Prosser, Wellington | Excavators | Jan. 13, 1857. | IX. |
| 16397 | Provines, William | Bands of cotton-bales, &c., metallic fastenings for | Sept. 29, 1857. | XII. |
| 18289 | Provost, Charles J. | Harnesses, awning-frames for horses attachable to | Sept. 29, 1857. | XVI. |
| 18300 | Pullman, N. | Sawing-machine | April 21, 1857. | XIV. |
| 17112 | Pumort, H. F. | Tenoning-machine | Sept. 15, 1857. | XIV. |
| 18212 | Putnam, Perry, and John E. Crane. | Window-curtain fixtures | Mar. 31, 1857. | Reissue. |
| 443 | Putnam, Silas S. | | | |

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|-------|--|---|----------------|---------|
| 16806 | Pye, George, and John W. Burton. (See Burton & Pye.) | Cars, railroad, method of preventing dust, &c., from entering the windows of. | Mar. 10, 1857 | X |
| 18411 | Pyfer, Philip M. | Vessels, means for flooding. | Oct. 13, 1857 | VII. |
| 18037 | Quigly, John. | Boring-machine | Aug. 25, 1857 | XIV. |
| 18706 | Race, Washburn | Pump-packings | Nov. 24, 1857 | XI. |
| 18990 | Radley, John B., et al. (See Zepfel, Joseph, assignor.) | Car-coupling, railroad. | Dec. 29, 1857 | X |
| 16996 | Rague, John F. | Fence, field | April 7, 1857 | IX. |
| 16990 | Rains, Samuel. | Lanterns, pocket | Mar. 24, 1857 | V. |
| 16907 | Raleton, Andrew | Spades, steam | Mar. 10, 1857 | I. |
| 16608 | Ramsay, George M. | Stamp, hand | Feb. 10, 1857 | XVIII. |
| 17516 | Ramsey, P. A. | Pump, rotary | June 9, 1857 | XI. |
| 16398 | Ramsden, Robert. | Lamps, burning-fluid, construction of. | Jan. 13, 1857 | V. |
| 17115 | Randall, David F. | Hat-bodies, felting, machine for. | April 21, 1857 | III. |
| 17232 | Randall, Henry L. | Sleighs and cutters. | May 5, 1857 | X. |
| 16610 | Randall, Louis B. | Planters, seed | Feb. 10, 1857 | I. |
| 17450 | Randall, Silas G. | Planters, seed | June 2, 1857 | I. |
| 16995 | Randall, William | Musical instruments, strings for | April 7, 1857 | XVII. |
| 929 | Randolph & Hodgkinson. (See Hodgkinson & Randolph.) | Stoves, (Northern Light) | Aug. 25, 1857 | Design. |
| 930 | Randolph, T. F., and J. F. (See Moody, James, assignor.) | Stoves, (Crescent) | Aug. 25, 1857 | Design. |
| 931 | Ransom, S. H. | Stoves, (Peruvian) | Aug. 25, 1857 | Design. |
| 932 | Ransom, S. H. | Stoves, (Ocean) | Aug. 25, 1857 | Design. |
| 933 | Ransom, S. H. | Stoves, (Evening Star) | Aug. 25, 1857 | Design. |
| 934 | Ransom, S. H. | Stoves, (Snow-Bird) | Aug. 25, 1857 | Design. |
| 18469 | Rathbone & Co. (A.) (See Gibbs, S. W., assignor.) | Stoves, coal | Oct. 20, 1857 | V. |
| | Rathbone & Co. (B.) (See Gibbs, S. W., assignor.) | | | |
| | Rathbone & Co. (C.) (See Gibbs, S. W., assignor.) | | | |
| | Rathbone & Co. (D.) (See Gibbs, S. W., assignor.) | | | |
| | Rathbone & Co. (E.) (See Gibbs, S. W., assignor.) | | | |
| | Raub, D. Christian | | | |
| | Ray, A. H., and J. S. L. Babba. (See Babbs & Ray.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|--------------|
| 18068 | Raymond, Charles, and W. H. Nettleton. (See Nettleton & Raymond.) Raymond, Lewis Read, Maguire, & Wright, assignors to Gilbert. (See Maguire, Read, & Wright.) Read, Smith, & Brown, assignors to Leibbrand, McDowell, & Co. (See Smith, Brown, & Read, assignors.) Read, Smith, & Brown, assignors to Leibbrand, McDowell, & Co. (See Smith, Brown, & Read, assignors.) Read, Calvin D., and John T. Whitaker. (See Whitaker & Read.) Read, Henry F., <i>et al.</i> (See Burr, Samuel J., assignor.) | Bending-machine | Aug. 25, 1857..... | II. |
| 17233 | Read, John B. | Fire-arms..... | May 5, 1857..... | XIX. |
| 18707 | Read, John B. | Projectile for fire-arms..... | Nov. 24, 1857..... | XIX. |
| 17451 | Read, Josiah M. (See Copeland, Josiah, assignor.) | Harvesters | June 2, 1857..... | I. |
| 17517 | Read, W. T. B. | Fans, automatic | June 9, 1857..... | XVII. |
| 167 | Redmond, Owen | Spoke and axe-helve machine..... | June 30, 1857..... | Add'l imp't. |
| 17065 | Read, George P. | Watches | April 14, 1857..... | VIII. |
| 510 | Read, George P. | Watches..... | Nov. 14, 1857..... | Reissue. |
| 17893 | Read, John A. | Valves and passages to the cylinders of steam-engines, arrangement of. | July 28, 1857..... | VI. |
| 16355 | Reeder, William S. | Saw, circular; device to allow and play, independent of the driving shaft. | Feb. 17, 1857..... | XIV. |
| 18412 | Reeder, William S. | Mill-shafting, &c., elastic coupling for..... | Oct. 13, 1857..... | XIII. |
| 17894 | Reese, Adam B. | Harvesters, guard-fingers for..... | July 28, 1857..... | I. |
| 17837 | Reese, John, and Charles N. Tyler..... | Lantern for lighting street gas | June 23, 1857..... | V. |
| 17896 | Reese, John, and Charles N. Tyler..... | Lanterns, street | June 30, 1857..... | V. |
| 16496 | Reeré, John F. | Pen, writing..... | Jan. 27, 1857..... | XVIII. |

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|-------|---|--|-----------------|---------|
| 969 | Rahn, C. L., and H. Everett. | Keys, metal. | Oct. 13, 1857. | Design. |
| 16838 | Reld, L. | Processes for preparing fertilizers. | Mar. 24, 1857. | IV. |
| 16706 | Reimann, H. | Cigar-lighters, machine for making. | Nov. 24, 1857. | XXII. |
| 18160 | Reinig, William. | Mixtures, wash, for woollens, &c. | Sept. 8, 1857. | IV. |
| | Remington, Samuel. (See Sayre, Charles W., assignor.) | | | |
| 17013 | Remsen, Henry R., assignor to H. E. Remsen and W. J. Noyes. | Castings, cleaning, mill for. | April 9, 1857. | II. |
| | Renwick, E. S. (See Wagner, J. Z. A., assignor.) | | | |
| 17748 | Resor, W., & Co. (See John C. Smith, assignor.) | | | |
| 17297 | Reor, William. | Stoves, cooking. | July 7, 1857. | V. |
| 18301 | Reuthe, Frederick. | Traps for animals. | May 12, 1857. | XXII. |
| 16570 | Reyman, J. B. | Fences, wire, construction of. | Sept. 29, 1857. | IX. |
| | Reynolds, George H., assignor to G. H. Reynolds and D. B. Hinchley. | Valves, cut-off, operating, of steam engines. | Feb. 3, 1857. | VI. |
| 17716 | Reynolds, George H., assignor to himself and D. B. Hinchley. | Shaftings, &c., strap pillow-block for. | June 30, 1857. | XIII. |
| 16399 | Reynolds, J. A. | Auger, tubular. | Jan. 13, 1857. | XIV. |
| 18944 | Reynolds, O. L., assignor to H. F. Snow. | Washboards, stiles of, machine for cutting zig-zag grooves in the. | Dec. 22, 1857. | XIV. |
| 16748 | Reynolds, Rensselaer. | Clutch, centrifugal friction. | Mar. 3, 1857. | XIII. |
| 16381 | Reynolds, Samuel. | Water-wheel. | Mar. 24, 1857. | XI. |
| 18769 | Rible, John H. | Harvesters, corn. | Dec. 1, 1857. | I. |
| 17184 | Rice, Benjamin F., assignor to B. R. Smith and C. H. Morgan. | Paper bags, &c., machines for making. | April 28, 1857. | XVIII. |
| 17638 | Rice, Luther O. | Carriages, central draught-joint of. | June 23, 1857. | X. |
| 18724 | Rich, Obadiah, assignor to Peter Cooper. | Preparing glue stock. | Nov. 24, 1857. | IV. |
| 17655 | Richards, Ira A., assignor to Silas Stevens. | Screws, cutting taps and dies for. | June 23, 1857. | II. |
| 18059 | Richards, Samuel. | Glass furnaces. | Aug. 26, 1857. | XV. |
| | Richardson, Hanson, & Smith. (See Smith, Hanson, & Richardson.) | | | |
| 953 | Richardson, N. P., and William W. Stevens. | Stoves, six-plate. | Oct. 13, 1857. | Design. |
| 954 | Richardson, N. P., and William W. Stevens. | Stoves. | Oct. 13, 1857. | Design. |
| 17534 | Richardson, Sylvanus. | Planters, corn. | June 16, 1857. | I. |
| 18563 | Richardson, T. M., assignor to himself and J. W. Havner. | Steering apparatus. | Nov. 17, 1857. | VII. |
| 17446 | Rickart, Alexander. | Carriage-hubs, method of turning. | July 21, 1857. | X. |
| 16749 | Riettmuller, J. Christian. | Locks. | Mar. 3, 1857. | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|---------------------|------------|
| 18708 | Rigby, William, and Robert Muckelt. (See Muckelt & Rigby) | Trusses..... | Nov. 24, 1857..... | XX. I. |
| 18928 | Riggs, J. W..... | Cultivators..... | Dec. 22, 1857..... | Reissue. |
| 430 | Righter, John..... | Sugar-works..... | Mar. 17, 1857..... | Extension. |
| | Rillieux, Norbert..... | Sugar-works..... | Aug. 19, 1857..... | XIII. |
| 17116 | Rillieux, Norbert..... | Mills, grinding..... | April 21, 1857..... | II. |
| 16997 | Ripley, E..... | Wrench..... | April 7, 1857..... | II. |
| 17013 | Ripley, Extra. Ritchie, Henry, assignor to himself, Samuel C. Thompson, and G. W. Westerfield. | Lock, car..... | April 7, 1857..... | |
| 16497 | Ritter, Samuel S..... | Trusses, hernia..... | Jan. 27, 1857..... | XX. II. |
| 16695 | Robbins, Archibald, Alanson Shewman, and Law-son R. Bigelow. | Saw-filer..... | Feb. 24, 1857..... | |
| 17170 | Robbins, Ira..... | Saw-mills, head blocks of, method of cutting..... | April 28, 1857..... | XIV. |
| 17392 | Robbins, Louis S..... | Compound, fertilizing..... | May 26, 1857..... | IV. |
| 16611 | Robbins, Martin..... | Planters, corn..... | Feb. 10, 1857..... | I. |
| 17391 | Roberts, A. A., and B. Davis..... | Cultivators, cotton..... | May 26, 1857..... | I. |
| 16612 | Roberts, Cyrus..... | Horse-powers, attaching the arms of..... | Feb. 10, 1857..... | XIII. |
| | Roberts, Hubbell, & Wood. (See Wood, Hubbell, and Roberts.) | Scissors-sharpener..... | Nov. 24, 1857..... | XXII. |
| 18709 | Roberts, William E..... | | | |
| | Robertson & Dunbar, assignors to the Buffalo Eagle Iron Works Co. (See Dunbar & Robertson, assignors.) | | | |
| 18862 | Robertson, C. H..... | Presses, cheese..... | Dec. 15, 1857..... | XII. |
| 16778 | Robertson, Daniel M..... | Screws, pointing and threading..... | Mar. 3, 1857..... | II. |
| 16850 | Robertson, T. J. W..... | Sewing-machines..... | Mar. 17, 1857..... | III. |
| 18249 | Robertson, T. J. W..... | Stamp, hand..... | Sept. 22, 1857..... | XVIII. |
| 18470 | Robertson, T. J. W..... | Sewing-machines..... | Oct. 20, 1857..... | III. |
| 18530 | Robertson, Thomas A..... | Cultivators..... | Oct. 27, 1857..... | I. |
| | Robertson, Thomas J. W..... | Sewing-machines..... | Feb. 10, 1857..... | III. |
| 460 | Robie, Jacob C..... | Turn-tables..... | May 5, 1857..... | Reissue. |

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|-------|---|--|---------------------|--------------|
| 17334 | Robinson, Charles..... | Stair-steps, arrangement of | May 5, 1857..... | IX. |
| 17696 | Robinson, Charles..... | Bedstead slats, suspending elastic loop for | June 30, 1857..... | XVII. |
| 18772 | Robinson, of Eli, John..... | Planters, reed..... | Dec. 1, 1857..... | I. |
| 18519 | Robinson, John S., Levi Herendeen, and George Sheldon..... | Chair, railroad..... | Oct. 27, 1857..... | X. |
| 17056 | Robinson, William..... | Kilns, lime..... | April 14, 1857..... | XV. |
| 18929 | Robinson, William..... | Vegetable-cutters | Dec. 22, 1857..... | XVII. |
| 16432 | Robinson, William, assignor to himself and Amos W. Beardsley..... | Cordage machines, laying tops for..... | Jan. 20, 1857..... | III. |
| 18060 | Robjohn, Thomas..... | Inkstand..... | Aug. 25, 1857..... | XVIII. |
| 17639 | Rockwell, James N..... | Axes, &c., hardening..... | June 23, 1857..... | II. |
| 16656 | Rode, Rufus..... | Boat-oars..... | Feb. 17, 1857..... | VII. |
| 17518 | Rod-boy, George W..... | Saws, circular, shield and guide for..... | June 9, 1857..... | XIV. |
| 16751 | Rodier, Louis C..... | Washing-machines | Mar. 3, 1857..... | XVII. |
| 17953 | Roe, E. R..... | Car-brakes, railroad, mechanism for operating..... | Aug. 11, 1857..... | X. |
| | Rogers, Sperry, Ashmead, & Hurlbert. (See White, Leroy S., assignor.) | | | |
| | Rogers, Augustus, and J. R. Wendt. (See Wendt, John R.) | | | |
| 18521 | Rogers, Caleb B..... | Mortising-machines, chisel in, device for reversing the..... | Oct. 27, 1857..... | XIV. |
| 17749 | Rogers, Charles D..... | Harvesters, scroll-wheel for..... | July 7, 1857..... | I. |
| 17452 | Rogers, David B..... | Shovels, making, machine for..... | June 6, 1857..... | II. |
| 18104 | Rogers, Thomas J..... | Planters, cotton-seed..... | Sept. 1, 1857..... | I. |
| 16998 | Rohan, D..... | Window-shutters, mode of arranging and operating..... | April 7, 1857..... | IX. |
| 18105 | Rohrman, Joseph H..... | Lanterns..... | Sept. 1, 1857..... | V. |
| 18463 | Roland, Enoch N..... | Lubricating oil-cups..... | Dec. 15, 1857..... | XII. |
| 16400 | Roland, Isaac S..... | Gates, farm, method of hanging..... | Jan. 13, 1857..... | IX. |
| 172 | Rolland, Jean Louis..... | Dough, kneading, machines for..... | July 21, 1857..... | Add'l imp't. |
| 18391 | Rollin, Daniel G..... | Springs, volute, machine for making..... | Dec. 29, 1857..... | II. |
| | Rollins, George A., and A. Hardy. (See Hardy & Rollins.) | | | |
| | Root, Livingston, & Haswell. (See Carney, N. B., assignor.) | | | |
| 16613 | Root, John B..... | Engines, steam, rotary | Feb. 10, 1857..... | VI. |
| 18959 | Root, John B..... | Engines, steam, rotary | Dec. 29, 1857..... | VI. |
| 17393 | Root, M. C..... | Pipe, stove, machine for making..... | May 26, 1857..... | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|-----------------|--------|
| 18554 | Root, M. C. | Doors, windows, &c., iron shutters for | Nov. 3, 1857. | IX. |
| 18592 | Roper, S. H. | Sewing-machines | Oct. 27, 1857. | III. |
| 16750 | Roraback, Isaac | Soap-mixture. | Mar. 3, 1857. | IV. |
| 17640 | Rose, Timothy | Candlesticks | June 23, 1857. | V. |
| 17298 | Rosefield, Charles Adolphus. | Pens, fountain. | May 12, 1857. | XVIII. |
| 16614 | Ross, Benjamin, and John C. Campbell | Roofing, metallic | Feb. 10, 1857. | IX. |
| 16809 | Ross, J. P. | Valve-gear of direct-action steam-engines. | Mar. 10, 1857. | VI. |
| 16308 | Ross, James M. | Breastpins, guard for. | Mar. 10, 1857. | XVIII. |
| 16881 | Ross, Robert, and Hosea Willard. (See Willard & Ross.) | Car-wheels for railroads, cast-iron | Mar. 17, 1857. | X. |
| 17895 | Roth, J. A. | Paper-stuff, treating. | July 28, 1857. | III. |
| 17519 | Roth, Julius A. | Lamp-black, making | June 9, 1857. | IV. |
| 17809 | Routt, A. P. | Draining-machine. | July 14, 1857. | IX. |
| 17299 | Rowand, A. H. | Books, binding | May 12, 1857. | XVIII. |
| 17697 | Rowe, David | Corn, green, mode of preserving. | June 30, 1857. | XVII. |
| 18604 | Rowe, Philip C. | Trees, mode of protecting from canker-worms, &c. | Nov. 10, 1857. | I. |
| 18770 | Rowe, Spencer | Brooms, machine for making. | Dec. 1, 1857. | XVII. |
| 17896 | Rowlands, M. T. | Drilling rock, machines for | July 29, 1857. | IX. |
| 18964 | Roxbury Color and Chemical Manufactory. (See Ordway, John M., assignor.) | Press, steam cotton. | Dec. 15, 1857. | XII. |
| 17394 | Royce, William A. | Gaseous bodies, machinery for compressing | May 26, 1857. | XI. |
| 18295 | Ruberts, Barnabas, and Alexander Crumble, assignors to themselves and John Benson. | Valves, steam, arrangement of passages and means for working, by the direct action of steam. | Sept. 15, 1857. | VI. |
| 18771 | Rudisill, Joseph. | Saddles, riding | Dec. 1, 1857. | XVI. |
| 17472 | Rugg, Datus E., assignor to himself and Dexter N. F. Rice. | Boilers, steam, water-gauges for. | June 2, 1857. | VI. |
| 18603 | Ruggles, S. P., Power-press Manufacturing Company. (See Morse, Jedediah, assignor.) | Seeding-machines | Nov. 10, 1857. | I |

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|-------|--|---|---|-------------|
| 18930 | Russell, Isaac D. (See Waterman, C., administrator.) | Sawing off logs, machine for..... | May 19, 1857..... | Extension. |
| 17351 | Russell, Isaac D., and C. Waterman, administrators. (See Waterman & Russell.) Russell, Isaac D., and Cornelia Waterman, administrator of Stephen Waterman, deceased. Russell, S. J..... Russell, W. G., assignor to himself and William Sewell. | Clothes racks..... Lantern and oil-can combined..... | Dec. 22, 1857..... May 19, 1857..... | XVII. V. |
| 17717 | Saben, John P. (See Tolman, Thomas.) Safford, B. W., and W. M. Galusha. (See Galusha & Safford.) Safford, H. W. and H., et al. (See Gusman, Lewis B., assignor.) Sage, William, assignor to Henry Sage..... Sailor, Smith, & Brown, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.) Sailor, Brown, & Smith, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.) | Sewing-machines..... | June 30, 1857..... | III. |
| 17395 | Saladee, C. W..... | Bit for cutting out cylindrical plugs of wood..... | May 26, 1857..... | XIV. |
| 18106 | Saladee, C. W..... | Carriage-tops, mode of adjusting..... | Sept. 1, 1857..... | X. |
| 18485 | Saladee, C. W..... | Vehicles, bracing springs of..... | Dec. 15, 1857..... | X. |
| 17586 | Salomon, John C., Jr..... Sanborn, A., and Joseph Peery. (See Peery & Sanborn.) | Condensing apparatus for salt and gases..... | June 16, 1857..... | IV. |
| 16615 | Sanders, B. D..... | Mill-stones, facing of, instruments for facilitating the..... | Feb. 10, 1857..... | XIII. |
| 18523 | Sanders, B. D..... | Bee-hives..... | Oct. 27, 1857..... | I. |
| 16754 | Sanders, Benjamin B..... | Candle-mould machines..... | Mar. 3, 1857..... | IV. |
| 455 | Sanford, D. W. C..... | Refrigerators..... | April 21, 1857..... | Release. |
| 17340 | Sanford, Samuel T..... Sargent, C. G., and F. A. Calvert. (See Calvert & Sargent.) | Printing, stencil-plate..... | May 19, 1857..... | XVIII. |
| 16852 | Sargent, Charles G., et al. (See Moore, George E., assignor.) | Lamps, fluid, burner of burning..... | Mar. 17, 1857..... | V. |
| 16453 | Sargent, Rufus W..... | Timber, bending, machines for..... | Jan. 20, 1857..... | XIV. |
| 17520 | Sarven, James D..... Sarven, James D..... | Carriage-wheel..... | June 9, 1857..... | X. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------|----------|
| 16953 | Savage, Elliott | Metal, sheet, machine for cutting and bending | Mar. 17, 1857 | II. |
| 16973 | Sawin, John, D. J. Goodspeed, and John H. Minott. | Chairs, infantine exercising | Dec. 15, 1857 | XVII. |
| 16657 | Sawtell, John N. | Spinning-flyers, manufacturing | Feb. 17, 1857 | III. |
| | Sawyer & Hall. (See Cox, Samuel A., deceased, assignor.) | | | |
| 17750 | Sawyer, Charles B. | Stoves, air-heating | July 7, 1857 | V. |
| 17014 | Sawyer, Joseph and Sylvester, assignors to the American Hoop Machine Company. | Hoop poles, splitting, machine for | April 7, 1857 | XIV. |
| 16513 | Sawyer, Sylvester, assignor to American Hoop Machine Company. | Planing hoops, machine for | Jan. 27, 1857 | XIV. |
| 18471 | Sayre, Charles H., assignor to Samuel Remington and Charles H. Sayre. | Cultivator-teeth | Oct. 20, 1857 | I. |
| 18073 | Sayre, Charles H., assignor to himself and Samuel Remington | Cultivators | Aug. 25, 1857 | I. |
| 16935 | Schaffer, John. | Capstans, steamboat | Mar. 31, 1857 | VII. |
| 483 | Schaffer, John. | Steamboats, capstans for | Aug. 25, 1857 | Reissue. |
| 17453 | Scharer, John F. | Die-stock | June 2, 1857 | II. |
| 17642 | Schenkl, John P. | Fire-arms, breech-loading | June 23, 1857 | XIX. |
| 17812 | Schilling, Gustav | Pianos, wrest-pin for | July 14, 1857 | XVIII. |
| 18773 | Schmitt, Charles C. | Workboxes | Dec. 1, 1857 | XVII. |
| 16658 | Schnebly, William and Thomas | Harvesting grain and grass, machines for | Feb. 17, 1857 | I. |
| 18710 | Schneider, Elias, and A. Kolman | Coffee-roasters | Nov. 24, 1857 | XVII. |
| 17522 | Schneider, G. C. | Screw-chasers, hob for cutting | June 9, 1857 | II. |
| 17898 | Schnepf, Charles. | Planters, corn | July 28, 1857 | I. |
| | Schofield & Hotchkiss. (See Hotchkiss & Schofield.) | | | |
| 18061 | Schofield, Edwin A. | Looms | Aug. 25, 1857 | III. |
| 17847 | Schofield, N. | Governor for water, steam, and other power | July 21, 1857 | VI. |
| 16819 | Schofield, N., and W. W. Wight, assignors to Nathan Schofield. | Bomb for killing whales | Mar. 10, 1857 | XIX. |
| 18934 | Schofield, Nathan | Bomb-lance, cushion for wings of | Dec. 8, 1857 | XIX. |
| 18866 | Schofield, Nathan | Projectiles, shells and other, fuses of | Dec. 15, 1857 | XIX. |

| 478 | Schofield, Nathan, and William W. Wight, assignor to Nathan Schofield. | Bomb for killing whales..... | July 14, 1867..... | Reissue. |
|-------|--|--|---------------------|----------|
| 17686 | Schooley, John C..... | Refrigerators..... | June 16, 1867..... | XVII. |
| 18020 | Schooley, John C..... | Inhalng apparatus..... | Aug. 18, 1867..... | XX. |
| 17921 | Schreiner, Henry, Jr., assignor to H. Schreiner, Jr., and George Lark, assignors to Henry Schreiner, Jr. | Cultivators..... | July 14, 1867..... | I. |
| 17897 | Schroeder, R. E..... | Carpets, fastenings for..... | July 28, 1867..... | XVII. |
| 17523 | Scott, E. W., and A. M. George..... | Nail-machine..... | June 9, 1867..... | II. |
| 16983 | Scott, Isaac R., and William G. Pike. (See Pike & Scott) | Sawing-machine, cross-cut, portable..... | Mar 24, 1867..... | XIV. |
| 17454 | Scotton, Stephen..... | Sawing-machine, portable cross-cut..... | June 2, 1867..... | XIV. |
| 17171 | Scoville, Thaddeus S..... | Planing hoops, machines for..... | April 28, 1867..... | XIV. |
| 17524 | Scribner, Gilbert H. (See Monroe, Edwin P., assignor.) | Boots, manufacture of..... | June 9, 1867..... | XVI. |
| 17521 | Scrimgeour, James..... | Saws, circular, method of adjusting obliquely to their shaft. | June 9, 1867..... | XIV. |
| 18161 | Scriven, G. R..... | Chisel, mortising..... | Sept. 8, 1867..... | XIV. |
| 18107 | Scroggs, John A..... | Boats, canal, tow-lines of, means for attaching whiffletrees to the. | Sept. 1, 1867..... | VII. |
| | Seaman, Andrew..... | | | |
| | Seamless Garment Manufacturing Co. (See Giltschell & Badger, assignors.) | | | |
| 18968 | Seavy, Eben. (See Weeks, Daniel P., assignor.) | Warmers, feet..... | Dec. 15, 1867..... | V. |
| 17757 | Seekins, H. G., and H. G. Seekins, Jr..... | Jack, lifting..... | July 7, 1867..... | XII. |
| 16936 | Seekins, Heber G., and Charles H. Goss..... | | | |
| 17941 | Seely, H. H. (See Grover, Manasseh, assignor.) | | | |
| 17941 | Seely, John..... | Dry docks, floating sectional..... | Feb. 24, 1867..... | IX. |
| 17941 | Seely, Samuel J..... | Lock gates, canal..... | Nov. 3, 1867..... | IX. |
| 457 | Seely, Samuel J., assignor to John M. Hood..... | Nails, forging, machine for..... | Aug. 4, 1867..... | II. |
| 16340 | Selby, James..... | Drill, seed..... | April 21, 1867..... | Reissue. |
| 17235 | Selden, L. K..... | Umbrellas, folding..... | Jan. 6, 1867..... | XXI. |
| 17587 | Sellers, Coleman..... | Stoves, close or open..... | May 1, 1867..... | V. |
| 17641 | Sellers, Henry..... | Stamp, postage, and label sticker..... | June 16, 1867..... | XVIII. |
| 18775 | Sellers, William..... | Boring mills..... | June 23, 1867..... | II. |
| 17236 | Sellers, William and Coleman..... | Bolts, threading, machine for..... | Dec. 1, 1867..... | II. |
| 18021 | Selpho, William..... | Shating, coupling for..... | May 5, 1867..... | XIII. |
| | | Hands, artificial, construction of..... | Aug. 18, 1867..... | XX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------------|----------------------------|
| 18062 | Sergeant, Isaac A. | Washing-machines | Aug. 25, 1857 | XVII. |
| 17473 | Seropyan, Christopher D., assignor to William Couland and J. D. Bald. | Bank-notes, &c., to prevent counterfeiting of. | June 2, 1857 | XVIII. |
| 18069 | Serrell, James E., and W. Davis. | Life-preservers | Dec. 15, 1857 | VII. |
| 16999 | Seymour, E. L. | Gold-separator | Aug. 7, 1857 | II. |
| 16776 | Seymour, E. L., assignor to J. C. and Charles Wright, H. J. Green, and E. L. Seymour. | Alarm, nautical. | Mar. 4, 1857 | VII. |
| 17172 | Seymour, Henry A. | Steel-plates, tempering | April 28, 1857 | II. |
| 18774 | Seymour, Pierpoint. | Lime and other fertilizers, machine for spreading. | Dec. 1, 1857 | I. |
| 511 | Seymour, William H., assignor to himself and Dayton S. Morgan. | Harvesters, grain and grass | Dec. 1, 1857 | Reissue. |
| 512 | Seymour, William H., assignor to himself and Dayton S. Morgan. | Harvesters, grain and grass | Dec. 1, 1857 | Reissue and division, (B.) |
| 513 | Seymour, William H., assignor to himself and Dayton S. Morgan. | Harvesters, grain and grass | Dec. 1, 1857 | Reissue and division, (C.) |
| 16402 | Shaerer, John | Hub-borer | Jan. 13, 1857 | XIV. |
| 170 | Shaerer, John | Hub-borer | July 14, 1857 | Add'l Imp't. |
| 17649 | Shannon, Thomas E. | Cultivators, cotton and cane | July 21, 1857 | I. |
| 17811 | Shannon, William T. | Trap, fly | July 14, 1857 | XXII. |
| 16498 | Shares, Daniel W. | Harrows | Jan. 27, 1857 | I. |
| 16403 | Sharp, Reuben W. | Planing shingles or tapering pieces, machinery for. | Jan. 13, 1857 | XIV. |
| 18355 | Sharp, Theodore, and S. E. Fitch (See Fitch & Sharp.) | Ploughs | Oct. 6, 1857 | I. |
| 434 | Sharp, Thomas | Carding-engines | Mar. 10, 1857 | Reissue. |
| | Shattuck, A. D. | | | |

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|-------|--|--|---------------------|---------|
| 18004 | Shattuck, David, assignor to himself, John S. Shattuck, Jacob Morrill, and William Marshall. | Street-sweeping machines..... | Nov. 17, 1867..... | XXII. |
| 18007 | Shaw, David E..... | Husking-palm | Nov. 10, 1867..... | I. |
| 17698 | Shaw, Jacob, jr..... | Fire-arms..... | June 30, 1867..... | XIX. |
| 17415 | Shaw, John..... | Boots and shoes, heels of, heel-cutter for cutting out. | June 2, 1867..... | XVI. |
| 16401 | Shaw, Joseph..... | Cultivator, cotton..... | Jan. 13, 1867..... | I. |
| 16753 | Shaw, Malcolm..... | Projectiles..... | Mar. 3, 1867..... | XIX. |
| 16659 | Shaw, Nathaniel H..... | Shoe-peg, splitting machine for..... | Feb. 17, 1867..... | XVI. |
| 17117 | Shaw, Palmer..... | Harness-saddles..... | April 21, 1867..... | XVI. |
| 18108 | Shaw, William F..... | Iron, smoothing..... | Sept. 1, 1867..... | XVII. |
| 18983 | Sheidley, H. O..... | Mill, cider..... | Dec. 29, 1867..... | XIII. |
| | Sheldon & Smith. (See Vedder, N. S., assignor.) | | | |
| | Sheldon, Robinson, & Herendeen. (See Robinson, Herendeen, & Sheldon.) | | | |
| 18870 | Sheldon, Harmon A..... | Pumps..... | Dec. 15, 1867..... | XI. |
| 18993 | Shelton, A. C., and Hyron Tuttle..... | Carriage-tops, joints for..... | Dec. 29, 1867..... | X. |
| 860 | Shepard, Charles J..... | Ranges, cooking..... | Feb. 10, 1867..... | Design. |
| 16757 | Shepard, Charles J..... | Pavements, cast-iron..... | Mar. 3, 1867..... | IX. |
| 17456 | Shepard, Charles J..... | Ranges, cooking..... | June 2, 1867..... | V. |
| 18931 | Shepherd, Daniel, <i>et al.</i> (See Feger, D. H., assignor.) | Globe, apparatus for illustrating conic sections and the lines of the. | Dec. 22, 1867..... | VIII. |
| 18302 | Shepherd, Samuel..... | Stemming and polishing pea nuts, method of..... | Sept. 29, 1867..... | I. |
| | Shepherd, Samuel, and Thomas L. Colville. (See Colville & Shepherd.) | | | |
| 17942 | Sherman, N. C., and S. Lightcap..... | Harvesters..... | Aug. 4, 1867..... | I. |
| 18356 | Sherman, Sylvester J..... | Hot-air regulators..... | Oct. 6, 1867..... | V. |
| 18102 | Sherwood, John P..... | Locks..... | Sept. 8, 1867..... | II. |
| 17699 | Sherwood, William..... | Gates, farm, mode of opening and closing..... | June 30, 1867..... | IX. |
| 17848 | Shetter, Solomon..... | Hoes, garden..... | July 21, 1867..... | I. |
| | Shewman, A., A. Robbins, & L. E. Bigelow. (See Robbins, Shewman, & Bigelow.) | | | |
| 17994 | Shilling, Jesse..... | Mash-cooling machines..... | Aug. 11, 1867..... | IV. |
| 18867 | Shipley, John..... | Winnowing machines..... | Dec. 15, 1867..... | I. |
| | Shoemaker, Silaby, & Mynderse. (See Holly, Birdsell, assignors.) | | | |
| 17751 | Shoenberger, Edwin F..... | Shaft-coupling..... | July 7, 1867..... | X. |
| 936 | Sholl, G. W., and Charles Stewart..... | Brick, ornamental design for..... | Aug. 26, 1867..... | Design. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|-----------------|--------|
| 17173 | Sibbet, J. W., and S. T. J. Coleman. (See Coleman & Sibbet.) | Bomb-lances. | April 28, 1857. | XIX. |
| 17407 | Sibley, Rufus. | Projectile for killing whales. | May 26, 1857. | XIX. |
| 18063 | Sibley, Rufus, assignor to Christopher C. Brand. | Engines, rotary steam, packing of. | Aug. 25, 1857. | VI. |
| 16384 | Sickels, Gerard. | Cars, railroad, steam brakes for. | Mar. 24, 1857. | X. |
| 18113 | Sickels, Theophilus E. | Hominy-machines. | Oct. 13, 1857. | XXII. |
| 16755 | Siemera, Peter. | Projectiles for rifled cannon. | Mar. 3, 1857. | XIX. |
| | Sigourney, John M. | | | |
| | Silsby, Mynderse, & Shoemaker. (See Holly, Birdell, assignor.) | | | |
| 16514 | Silvy, Joseph C., assignor to T. J. Dobyns. | Pens, fountain. | Feb. 3, 1857. | XVIII. |
| 17310 | Simmons, George W. and George H. | Cans, oil. | July 14, 1857. | XII. |
| 17643 | Simmons, James H. | Valves, cylindrical throttle, for steam-engines. | June 23, 1857. | VI. |
| | Simon & Poppenhusen. (See Poppenhusen & Simon.) | | | |
| 18303 | Simon, Conrad. | Hemp-brakes. | Sept. 29, 1857. | III. |
| 16535 | Simonds, Warren A. | Life-preservers. | Feb. 3, 1857. | VII. |
| 18109 | Simonds, Warren A. | Gas-generators, portable. | Sept. 1, 1857. | IV. |
| 17336 | Simpson, James E. | Vessels' keels, apparatus for examining. | May 26, 1857. | VII. |
| 16864 | Simpson, Michael H. | Wool, combing, machinery for. | Mar. 17, 1857. | III. |
| | Simpson, W. D., W. A. Clark, and S. D. Porter. (See Clark, Porter, & Simpson.) | | | |
| | Singer, Isaac M. (See Vaughan, assignor to Trotter, assignor to Singer.) | | | |
| 18994 | Sison, Henry T. | Port-folios. | Dec. 29, 1857. | XVIII. |
| 18536 | Skaggs, N. J. | Carriage-wheels, tires on, mode of tightening. | Nov. 3, 1857. | X. |
| | Skilton & Palmer. (See Whitaker, Welcome, assignor.) | | | |
| 18472 | Skinner, Chancey D., and Dennis Tryon. | Fire-arms, breech-loading. | Oct. 20, 1857. | XIX. |
| 18304 | Skinner, Henry. | Locomotives, &c., window for. | Sept. 29, 1857. | VI. |
| 18414 | Skinner, Salmon. | Gas-generators. | Oct. 13, 1857. | IV. |

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|-------|--|--|---------------------|--------|
| 18680 | Skinner, Smith, assignor to William H. Skinner and Jacob Nicholas, Jr. Skinner, Smith A. (See Doctor, Herman A., assignor.) | Washing-machine..... | Oct. 20, 1857..... | XVII. |
| 18683 | Skinner, Smith A., assignor to himself and Herman A. Doctor. | Husker, corn..... | Nov. 17, 1857..... | I. |
| 18776 | Skinner, William W..... | Ploughs..... | Dec. 1, 1857..... | I. |
| 17700 | Slater, Hugh..... | Wagons, brake for..... | June 30, 1857..... | X. |
| 17899 | Slawson, John B..... | Boxes, receiving, for passengers' fares..... | July 28, 1857..... | X. |
| 16936 | Sloan, William D..... | Forms, irregular, turning, automatic lathe for..... | Mar. 31, 1857..... | XIV. |
| 18305 | Sloan, William D..... | Drilling and milling machine..... | Sept. 29, 1857..... | XIV. |
| 18932 | Smart, C. W..... | Gate, farm, approach-opening..... | Dec. 22, 1857..... | IX. |
| 17311 | Smart, Luther T..... | Blind-slats, compressing the ends of, machine for..... | May 19, 1857..... | XIV. |
| 17589 | Smead, E. A..... | Metal pans, sheet, bending..... | June 16, 1857..... | II. |
| 17590 | Smead, E. A..... | Tin pans, wiring..... | June 16, 1857..... | II. |
| 18712 | Smead, J., and E. F. Parker. (See Parker & Smead.) Smethurst, Aaron..... | Locomotive engines, arrangement of cylinders and their connexions for..... | Nov. 24, 1857..... | VI. |
| 18252 | Smith & Sheldon. (See Vedder, N. S., assignor.) | Saws, filing and setting, machine for..... | Sept. 22, 1857..... | XIV. |
| 16404 | Smith, Alfred E..... | Axles, mail, and hubs, mode of constructing..... | Jan. 13, 1857..... | X. |
| 164'9 | Smith, Alfred E..... | Axle-boxes..... | Jan. 27, 1857..... | X. |
| 16661 | Smith, Alfred E..... | Axles, hubs on, mode of securing..... | Feb. 17, 1857..... | X. |
| 17770 | Smith, Amos J., assignor to himself and George W. Otis | Bit or drill-holder..... | July 7, 1857..... | XIV. |
| 18251 | Smith, B. C..... | Pavements, iron or other, mode of connecting or disconnecting the blocks of..... | Sept. 22, 1857..... | IX. |
| 17057 | Smith, Daniel C..... | Portmonnaies, lock and clasp for..... | April 14, 1857..... | XVIII. |
| 17703 | Smith, Daniel C..... | Harvesters, raking apparatus for..... | June 30, 1857..... | I. |
| 17752 | Smith, David A..... | Whiffletrees..... | July 7, 1857..... | X. |
| 18359 | Smith, E. Harry..... | Sewing-machines..... | Oct. 6, 1857..... | III. |
| 18605 | Smith, E. Harry..... | Sewing-machines..... | Nov. 10, 1857..... | III. |
| 17332 | Smith, Edward N., assignor to S. T. Bacon | Paper, folding, machines for..... | May 19, 1857..... | III. |
| 17300 | Smith, Edward Q..... | Planting chair-seats, machine for..... | May 12, 1857..... | XIV. |
| 17397 | Smith, F. J..... | Planters, corn..... | May 26, 1857..... | I. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|--|-----------------------|
| 967 | Smith, Francis N..... Smith, G., and H. Brown, assignors to Wolf, Moore, & Co. | Corn-shellers..... Stoves, cooks' | May 26, 1857..... Dec. 8, 1857..... | Extension. Design. |
| 966 | Smith, G., H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co. | Stoves, cooking | Oct. 13, 1857..... | Design. |
| 955 | Smith, G., H. Brown, and J. Read, assignors to Leibrant, McDowell, & Co. | Stoves..... | Oct. 13, 1857..... | Design. |
| 891 | Smith, G., H. Brown, and S. H. Sailor, assignors to J. G. Abbott and A. Lawrence. | Stoves..... | May 26, 1857..... | Design. |
| 962 | Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co. | Stoves..... | Oct. 20, 1857..... | Design. |
| 961 | Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co. | Stoves, parlor | Oct. 20, 1857..... | Design. |
| 960 | Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co. | Stoves, cooking..... | Oct. 20, 1857..... | Design. |
| 942 | Leibrant, McDowell, & Co. Smith, Garretson, Henry Brown, Samuel H. Sailor, assignors to J. G. Abbott and A. Lawrence. Smith, George F., and Lyman Beebe. (See Beebe & Smith.) | Stoves..... | Sept. 8, 1857..... | Design. |
| 17644 | Smith, Gilbert..... | Fire-arms, breech-loading | June 23, 1857..... | XIX. |
| 17702 | Smith, Gilbert..... | Cartridges | June 30, 1857..... | XIX. |
| 17701 | Smith, H. B..... | Mordanting-machine..... | June 30, 1857..... | XIV. |
| 17001 | Smith, H. S., Elijah Hason, and M. S. Richardson. Smith, H. W., and William C. Marshall. (See Marshall & Smith.) | Boxes, cylindrical, machine for manufacturing | April 7, 1857..... | XIV. |
| 18357 | Smith, Henry T..... | Bed-bottoms, spring..... | Oct. 6, 1857..... | XVII. |
| 18649 | Smith, Isaac L., and Charles C. Colburn..... | Butter-worker..... | Nov. 17, 1857..... | I. |
| 18524 | Smith, J. D..... | Planters, seed | Oct. 27, 1857..... | I. |
| 18341 | Smith, James..... | Doors, windows, &c., weather-strips for..... | Oct. 6, 1857..... | IX. |
| 18711 | Smith, James D..... | Multiplying numbers, machine for | Nov. 24, 1857..... | VIII. |
| 16810 | Smith, Jared W..... | Fluid-gates or faucets | March 10, 1857..... | XI. |
| 905 | Smith, John C., assignor to W. Reesor & Co..... | Stoves..... | July 7, 1857..... | Design. |

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|-------|---|--|-----------------|--------------|
| 18029 | Smith, John E. | Telegraph-repeaters | Aug. 18, 1857. | VIII. |
| 17704 | Smith, John W. | Gas-generators | June 30, 1857. | IV. |
| 18415 | Smith, Jonathan | Saw-filer | Oct. 13, 1857. | XIV. |
| 18680 | Smith, Joseph | Harness for horses | Feb. 17, 1857. | XVI. |
| 17544 | Smith, Joseph M. | Rollers, drawing, covering for | July 7, 1857. | III. |
| 17354 | Smith, Joseph S. | Hinge, spring | May 19, 1857. | II. |
| 18650 | Smith, Lewis | Belting-machine, fastening for | Nov. 17, 1857. | XIII. |
| | Smith, Luther L., and J. M. Bachelder. (See Bachelder & Smith.) | | | |
| 16986 | Smith, Norman | Ships' windlass, operating | Mar. 24, 1857. | VII. |
| 17595 | Smith, Phineas | Ships, steering apparatus for | June 9, 1857. | VII. |
| 16457 | Smith, R. H. | Cement, roofing | Jan. 20, 1857. | XV. |
| 17058 | Smith, Richard L. | Car-brakes, railroad | April 14, 1857. | X. |
| 18777 | Smith, Riley | Clothes-wringer | Dec. 1, 1857. | XVII. |
| 18995 | Smith, Riley | Presses, cotton | Dec. 29, 1857. | XII. |
| 18557 | Smith, Samuel J. | Printing-press, hand | Nov. 3, 1857. | XVIII. |
| 17753 | Smith, Samuel J., and Charles Lockle | Press, embossing and printing | July 7, 1857. | XVIII. |
| 17002 | Smith, Samuel N. | Ships' steering apparatus | April 7, 1857. | VII. |
| 16454 | Smith, Samuel R. | Sawing-machines, feeding lumber laterally in, method of. | Jan. 20, 1857. | XIV. |
| | Smith, W. G., and L. M. Bolles. (See Bolles & Smith.) | | | |
| 18358 | Smith, W. H. | Husker, corn | Oct. 6, 1857. | I. |
| 17307 | Smith, William M., assignor to himself and P. Hannay. | Press, copying | May 12, 1857. | XVIII. |
| 16405 | Snell, Daniel W., and S. S. Bartlett. | Looms | Jan. 13, 1857. | III. |
| 489 | Snell, Daniel W., and Stephen S. Bartlett. | Looms | Sept. 1, 1857. | Reissue. |
| 176 | Snell, Daniel W., and Stephen S. Bartlett. | Looms | Oct. 6, 1857. | Add'l imp't. |
| | Snell, Jasper, and John R. Deihm. (See Deihm & Snell.) | | | |
| | Snell, Robert, and John Chilcott. (See Chilcott & Snell.) | | | |
| 18778 | Sniff, W. | Sausage-machine | Dec. 1, 1857. | XVII. |
| 17000 | Snow, H. F. (See Reynolds, O. L., assignor.) | Syringer, veterinary | April 7, 1857. | XX. |
| 18306 | Somerville, William | Horse-shoes, attaching elastic soles to | Sept. 29, 1857. | II. |
| 17174 | Soule, Samuel W. | Excavator | April 28, 1857. | IX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|---------------------|--------|
| | Soules, Isaac, and John Case. (See Case & Soules.) | | | |
| 17756 | Southwick, Royal. (See Davis, Joseph, assignor.) | Stove, railroad car..... | July 7, 1857..... | V. |
| 18779 | Spear, James R..... | Hoops, metallic clasps for..... | Dec. 1, 1857..... | XII. |
| 16937 | Spencer, David B..... | Steam-ploughs..... | Mar. 31, 1857..... | I. |
| 16406 | Spencer, Oded..... | Fences, field, base or support of..... | Jan. 13, 1857..... | IX. |
| 16566 | Spencer, Robert..... | Saddles, riding, ladies'..... | Feb. 3, 1857..... | XVI. |
| | Sperry, Rodgers, Ashmead, & Hurlbut. (See White, Leroy S., assignor.) | | | |
| 16697 | Spiller, Joseph D..... | Saw-set..... | Feb. 24, 1857..... | XIV. |
| 17755 | Sprague, D. L., and Riley Burditt..... | Melodeon attachment..... | July 7, 1857..... | XVIII. |
| | Sprague, J. A., and Charles Tinker. (See Tinker & Sprague.) | | | |
| 18606 | Spratt, James..... | Candlestick..... | Nov. 10, 1857..... | V. |
| 18933 | Sprekel, G., and Thomas W Basford..... | Engines and pumps, oscillating, arrangement of..... | Dec. 22, 1857..... | VI. |
| | S. F. Ruggles, Power-press Manufacturing Co. (See Morse, Jedediah, assignor) | | | |
| 18360 | Squire, William C..... | Seed-sowing machines..... | Oct. 6, 1857..... | I. |
| | S. Stow, Manufacturing Co. (See Wright, John, assignor.) | | | |
| 17718 | Stacy, M. E., assignor to W. John Way..... | Valves, arrangement of, in steam cylinders..... | June 30, 1857..... | VI. |
| 17900 | Staford, Stephen..... | Homp-brakes..... | July 28, 1857..... | III. |
| | Stagg, John, and J. A. Bertola. (See Bertola, Joseph A., assignor.) | | | |
| 17119 | Stamp, T..... | Water-wheel, current..... | April 21, 1857..... | XL. |
| 18634 | Stanard, H. T..... | Fence, field, portable..... | Dec. 22, 1857..... | IX. |
| 17985 | Stanford, Otis W..... | Mills, grain dress of, grinding surfaces for..... | Aug. 11, 1857..... | XIII. |
| 18409 | Stanley, Horatio..... | Ploughs..... | Nov. 10, 1857..... | I. |
| | Starr, A. A., and O. L. Lawson. (See Lawson & Starr.) | | | |
| 18163 | Stauffer, William..... | Mills, grinding..... | Sept. 8, 1857..... | XIII. |

| | | | | |
|-------|--|---|-----------------|---------|
| 18871 | Steady, Thomas J. | Harvesters, mode of supporting reels for | Dec. 15, 1857. | I. |
| 17237 | Stearns, Charles | Process of preparing green sand marl as a fertilizer of lands. | May 5, 1857. | IV. |
| 17342 | Stearns, William, and J. Hyde. (See Hyde, Jos., and William Stearns.) | Faucet basin. | May 19, 1857. | XI. |
| 16950 | Stebbins, Erastus | Brushes, paint, manufacture of. | Mar. 31, 1857. | XVII. |
| 885 | Steer, James B. | Stoves. | May 5, 1857. | Design. |
| 972 | Stelle, Jacob, James Horton, and John Currie, assignors to F. H. Church. | Stove, cooking. | Dec. 22, 1857. | Design. |
| 17238 | Steinway, Henry, jr. | Plano-forte action. | May 5, 1857. | XVIII. |
| 18825 | Stenton, R. S. | Ploughs. | Dec. 8, 1857. | I. |
| 17986 | Stephens, Daniel. | Kilns, lime. | Aug. 11, 1857. | XV. |
| 18023 | Stephens, Edward W., and Richard Jenkins | Rail, railroad. | Aug. 18, 1857. | IX. |
| 16854 | Stephens, Osborn E. | Sawing-machines, circular, portable reciprocating. | Mar. 17, 1857. | XIV. |
| 16811 | Stephens, William | Watchmakers' lathe, chuck for. | Mar. 10, 1857. | XVIII. |
| 17705 | Stetson, Charles T. | Harvesters. | June 30, 1857. | I. |
| 17175 | Stevens, Edgar M. (See Wells, William, assignor.) | Tenoning blind slats, machine for. | April 28, 1857. | XIV. |
| 18370 | Stevens, Lafayette | Boring-machines, wood. | Oct. 6, 1857. | XIV. |
| 18872 | Stevens, Lafayette, assignor to William L. Gibson. | Boring-machine. | Dec. 15, 1857. | XIV. |
| 18473 | Stevens, Martin W., and Edward G. Kinaley | Hoisting-machines, corn. | Oct. 20, 1857. | I. |
| | Stevens, Silas. (See Richards, Ira A.) | | | |
| | Stevens, William W., and N. P. Richardson. (See Richardson & Stevens) | | | |
| 870 | Stevens, William W., and N. P. Richardson. (See Richardson & Stevens.) | Stoves, cooking. | Feb. 10, 1857. | Design. |
| 18110 | Stevenson, J. E. | Stair-railings, circular, instruments for drawing the curve of. | Sept. 1, 1857. | IX. |
| 16952 | Stewart, Charles, and G. W. Sholl. (See Sholl & Stewart.) | Printing from engraved plates, machine for. | Mar. 31, 1857. | XVIII. |
| 18024 | Stewart, George S. | Stoves, cooking, bakers for. | Aug. 18, 1857. | V. |
| | Stewart, Linus, and John McClelland, assignors to McClelland & McClelland. | | | |
| | Stewart, P. P. | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|----------------------|--------------|
| 18361 | Stickney, Ancil | Corn-sheller | Oct. 6, 1857 | I. |
| 17596 | Stiles, D. A. Stiles, Francis. (See Hankey & Stiles, assignors.) Stillwell, S., and J. Keech. (See Keech & Stilwell.) | Paper-file | June 9, 1857 | XVIII. |
| 17301 | Stimpson, J. Henry | Tools, soldering, heating by gas | May 12, 1857 | II. |
| 16557 | Stimpson, James | Joining boxes, &c., method of | Feb. 3, 1857 | XIV. |
| 18392 | Stinson, William H. | Sieves, coal | Oct. 6, 1857 | V. |
| 18416 | St. John, M. W., and Isaac Brown | Street-sweepers | Oct. 13, 1857 | XXII. |
| 18213 | St. John, Roswell H. | Watchmakers' lathes | Sept. 15, 1857 | XVIII. |
| 18780 | Stock, John | Photographic plate-holder | Dec. 1, 1857 | XVIII. |
| 17645 | Stoddard, William | Plane-irons in their stocks, mode of securing and adjusting. | June 23, 1857 | XIV. |
| 16896 | Stoddard, William | Alarm, pocket-book | Dec. 8, 1857 | XXII. |
| 13558 | Stoerger, P., and A. R. E. Falck. (See Falck & Stoerger.) | Carriage-tops, joints of | Nov. 3, 1857 | X. |
| 16408 | Stone, Reuben W. | Felloes in wheels, mode of tightening | Jan. 13, 1857 | X. |
| 16896 | Stoner, Augustus | Dredging, grappling or machine | Mar. 24, 1857 | IX. |
| 17176 | Stoner, Augustus | Sack-holder, self-adjusting | April 28, 1857 | XXII. |
| 183 | Stoner, Augustus | Sack-holder, self-adjusting | Dec. 22, 1857 | Add'l imp't. |
| 18613 | Storm, William M. | Steam, anhydrous, generating | Nov. 10, 1857 | VI. |
| 17343 | Stover, Henry D. | Planing-cutters, rotary | Nov. 19, 1857 | XIV. |
| 16768 | Stow, O. W., and Augustus Barnes | Snuffers, candle | Nov. 24, 1857 | XVII. |
| 17118 | Strait, Hiram | Husking corn, machines for | Mar. 3, 1857 | I. |
| 16407 | Strait, Hiram | Lubricator | April 21, 1857 | XII. |
| 18285 | Strange, Emerson C. | Sawing hoops, machine for | Jan. 13, 1857 | XIV. |
| 16887 | Strange, William, and Samuel Darling | Pencil-sharpeners | Sept. 22, 1857 | XVIII. |
| | Stratton, Richard A. | Mangles | Mar. 24, 1857 | XVII. |

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|-------|--|---|---------------------|--------|
| 16938 | Strawbridge, Nordyke, & Wiggins. (See Wiggins, Nordyke, & Strawbridge.) | Bit-stocks, method of constructing..... | Mar. 31, 1857..... | XIV. |
| 18337 | Streeter, Abel W..... Strong, Butler, <i>et al.</i> (See De Witt, E. H., assignor.) | Planters, potato | Dec. 8, 1857..... | I. |
| 16756 | Strong, Stephen H..... Stuart, Cresson, & Peterson. (See Beesley & Delany, assignors.) Stuart, Cresson, & Peterson. (See Beesley & Delany, assignors.) Stuart, Homer H..... | Hydraulic engines, supply and discharge valves of, method of operating the..... | Mar. 3, 1857..... | XI. |
| 17239 | Sturdevanta and James S. Taylor. (See Hopkins, Lansing E., assignor.) | Printing fabrics, rollers oreylinders for, mode of constructing..... | May 5, 1857..... | XVIII. |
| 16949 | Sturges, Wiler, & McFall. (See Wiler, Sturges, & McFall.) Sturges, Richard Ford..... | Paper-pulp, manufacture of | Mar. 31, 1857..... | III. |
| 18427 | Sturgis, Columbus F..... | Lasting-pincers | Oct. 13, 1857..... | XVI. |
| 17544 | Sturtevant, B. F., assignor to Elmer Townsend..... Sturtevant, B. F., assignor to himself and Elmer Townsend..... | Boots and shoes, pegging, machines for | June 9, 1857..... | XVI. |
| 17998 | Sturtevant, Benjamin F., assignor to himself and Elmer Townsend..... Sugden, Butler, & Co. (See Butler, William B., assignor.) | Boots and shoes, machines for pegging | Aug. 11, 1857..... | XVI. |
| 18307 | Suggett, Isaac..... | Lamp, hydro-carbon vapor | Sept. 29, 1857..... | V. |
| 17-50 | Sullivan, Jonathan L..... | Straw-cutters..... | July 21, 1857..... | I. |
| 18714 | Sumners, Joseph..... | Cultivators..... | Nov. 24, 1857..... | I. |
| 18035 | Suter, Frederick..... Sutherland, Joel B., I. V. Culin, <i>et al.</i> (See Driver, Samuel, assignor.) | Books, machine for turning the leaves of..... | Dec. 22, 1857..... | XVIII. |
| 17591 | Sutter, Joseph..... | Ploughs, gang | June 16, 1857..... | I. |
| 18559 | Sutton, Noah..... | Pumps | Nov. 13, 1857..... | XI. |
| 18252 | Swan, J. H..... | Car seats, railroad..... | Sept. 22, 1857..... | X. |
| 18253 | Swartz, Abram S..... | Bridge, trussed..... | Sept. 22, 1857..... | IX. |
| 17592 | Swartz, George W..... | Boats, propeller canal..... | June 16, 1857..... | VII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|--|---------------------|--------|
| 17943 | Swartz, George W. | Propeller-blade..... | Aug. 4, 1857..... | VII. |
| 17956 | Swartz, Samuel | Valve-gear of steam-engines..... | June 16, 1857..... | VI. |
| 18096 | Swift, Richard | Harness-saddles..... | Dec. 29, 1857..... | XVI. |
| 17944 | Tabele, William, and Jordan L. Mott. (See Mott & Tabele, assignors.) | Drill, self-feeding..... | Aug. 4, 1857..... | II. |
| 17699 | Taft, George C. | Wrench, screw..... | June 16, 1857..... | II. |
| 16900 | Taft, George C., and Henry W. Mason. | Drill-shaft, feeding..... | Mar. 24, 1857..... | II. |
| 18025 | Taft, George C., assignor to Henry W. Mason. | Shears for cutting metal..... | Aug. 18, 1857..... | II. |
| 17956 | Taft, Timothy F. | Excavating-machines..... | June 16, 1857..... | IX. |
| 16855 | Taggart, Alonzo. | Mowing-machines..... | Mar. 17, 1857..... | I. |
| 17129 | Taggart, John | Potato diggers..... | April 21, 1857..... | I. |
| 16898 | Taggart, John, assignor to himself and William W. Kesser. | Saw-mill dogs..... | Mar. 24, 1857..... | XIV. |
| 17910 | Taplin, John A. | Sash-fastener..... | July 28, 1857..... | II. |
| 18474 | Tarbell, F., assignor to himself and D. C. Bicknell. | Saw-mill, reciprocating..... | Oct. 20, 1857..... | XIV. |
| 17758 | Tarver, Samuel. | Gold washer and amalgamator..... | July 7, 1857..... | II. |
| 18111 | Tavney, T. V. | Casting bearings in iron wheels..... | Sept. 1, 1857..... | II. |
| 17706 | Taylor, Charles | Journal boxes for shafting, &c., manufacture of..... | June 30, 1857..... | XIII. |
| | Taylor, Daniel, assignor to himself and H. A. Chambers. | | | |
| | Taylor, Frederick S., & al. (See Hankey & Stiles, jr., assignors.) | | | |
| | Taylor, George, & al. (See Dugdale, Thomas A., assignor.) | | | |
| 17846 | Taylor, George, & al. (See Ogborn & Taylor.) | Rice, cleaning, machines for..... | June 23, 1857..... | XIII. |
| 17707 | Taylor, James S., and Sturdevanta. (See Hopkins, Lansing E., assignor.) | Die-stock..... | June 30, 1857..... | II. |
| 16343 | Taylor, John F. | Railroads, metallic cross-ties and chairs for, as a new manufacture. | Jan. 6, 1857..... | IX. |
| | Teachout, James. | | | |
| | Teal, Andrew. | Shingles..... | Dec. 8, 1857..... | XIV. |
| 18098 | Tenney, S. R., and Asa Bennett. | | | |

| | | Pavement, cast iron..... | July | 9, 1857..... | Extension. |
|-------|---|--|-------|---------------|--------------|
| 17813 | Terry, Harriet V., administratrix of William D. Terry, deceased. | Metal, cutting, machine for.... | July | 14, 1857..... | II. |
| 18614 | Tellow, James..... | Last-holders..... | Nov. | 10, 1857..... | XVI. |
| 17901 | Tewksbury, A. J..... | Apples, paring and slicing, machines for | July | 28, 1857..... | XVII. |
| 18475 | Thayer, Abraham. (See Copeland, Josiah, assignor.) | Ploughs..... | Oct. | 22, 1857..... | I. |
| 18254 | Thom, David K..... | Carriage-prop..... | Sept. | 20, 1857..... | X. |
| 17003 | Thomas, Chauncey..... | Road-scraper..... | April | 7, 1857..... | IX. |
| 16862 | Thomas, George W..... | Baby-walkers..... | Mar. | 17, 1857..... | XXII. |
| | Thomas, Joseph, assignor to Joseph Thomas and Charles A. Durgin. | | | | |
| 16759 | Thomas, Leopold..... | Door-springs..... | Mar. | 3, 1857..... | II. |
| 18476 | Thomas, Nathaniel..... | Apple-alicet..... | Oct. | 20, 1857..... | XVII. |
| 17344 | Thomas, William..... | Jack, lifting..... | May | 19, 1857..... | XII. |
| 18664 | Thomas, William P..... | Fence for poultry yards..... | Aug. | 26, 1857..... | IX. |
| 16617 | Thomason, H..... | Planters, seed..... | Feb. | 10, 1857..... | I. |
| 17537 | Thompson, Edward F..... | Mop-head..... | June | 9, 1857..... | XVII. |
| 18214 | Thompson, George..... | Alkalies, boxes for preserving..... | Sept. | 15, 1857..... | IV. |
| 16239 | Thompson, George W..... | Stoves for railway cars..... | Mar. | 31, 1857..... | V. |
| 16342 | Thompson, James H..... | Reapers, raking attachment for..... | Jan. | 6, 1857..... | I. |
| | Thompson, James M., and J. W. Currier. (See Currier & Thompson.) | | | | |
| 17957 | Thompson, John A..... | Filter..... | Aug. | 11, 1857..... | XI. |
| 16409 | Thompson, Joseph..... | Planters, seed..... | Jan. | 13, 1857..... | I. |
| 446 | Thompson, Moses..... | Furnaces for burning wet fuel..... | Mar. | 31, 1857..... | Reissue. |
| 18674 | Thompson, Moses..... | Furnaces, bagasse..... | Dec. | 16, 1857..... | V. |
| | Thompson, S. C., and G. W. Westerfield. (See Ritchie, Henry, assignor.) | | | | |
| 17177 | Thompson, Thomas..... | Wadding, winding, machine for..... | April | 28, 1857..... | III. |
| 163 | Thompson, William H., and Euseb P. Morgan..... | Hatches for warehouses, safety..... | April | 14, 1857..... | Add'l imp't. |
| 17593 | Thomson, Archibald..... | Water, method of elevating, by compressed air..... | June | 16, 1857..... | XI. |
| 17708 | Thomson, James, and William F. Wakelee..... | Coloring yarn in the bobbin..... | June | 30, 1857..... | IV. |
| 17240 | Thomson, Sardin..... | Clothes pounder..... | May | 5, 1857..... | XVII. |
| 18363 | Thorn, Joseph W..... | Picking cotton in the field, machines for..... | Oct. | 6, 1857..... | I. |
| 16760 | Thornton, Thomas F..... | Melodious..... | Mar. | 3, 1857..... | XVIII. |
| 18308 | Thrasher, Francis, and Henry B. Horton..... | Gases, vertico-lateral folding, method of opening and closing..... | Sept. | 29, 1857..... | IX. |
| | Thrasher, Francis, and Henry B. Horton..... | Window-sash..... | Nov. | 10, 1857..... | IX. |
| 18612 | Thrasher, John..... | Hubs for boring, clamp for centering..... | Nov. | 10, 1857..... | IX. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|---|-----------------|---------|
| 18937 | Troop, H. N. | Engines, steam, governor for | Dec. 29, 1857. | VI. |
| 947 | Thulemeyer, Gottfried | Coal-scuttles | Oct. 6, 1857 | Design. |
| 17647 | Thurber, Charles | Caligraphs | June 23, 1857. | XVII. |
| 17408 | Thurston, Stephen, assignor to himself, Marcus L. Ward, and Huntington & Co. | Boot and shoe soles, India rubber, gutta-percha, and other, machines for cutting. | May 26, 1857. | XVI. |
| 18026 | Tibbets, Joseph V. | Hot-air registers | Aug. 18, 1857. | V. |
| 18612 | Tidey, M. B. | Sewing-machines, circular table gauge for | Mar. 10, 1857. | XIV. |
| 16980 | Tidey, M. B. | Plane, carpenters' | Mar. 24, 1857. | XIV. |
| 17457 | Tidgewell, James and William | Printer's composing-stick | June 2, 1857. | XVIII. |
| 16510 | Tillinghast, William T. | Printers, composing stick for | Jan. 27, 1857. | XVIII. |
| 16761 | Tilton, John, and William Floyd. | Fire-arms, portable | Mar. 3, 1857. | XIX. |
| | Tilton, W. B., and E. P. Torrey. (See Torrey & Tilton.) | | | |
| 18560 | Timby, Theodore E. | Barometer | Nov. 3, 1857. | VIII. |
| 964 | Timby, Theodore E. | Barometer cases | Nov. 10, 1857. | Design. |
| 17945 | Tinker, Charles, and J. A. Sprague. | Harvesters | Aug. 4, 1857. | I. |
| 18417 | Titus, S. H., and O. Des Granges | Pavement, cellular iron | Oct. 13, 1857. | IX. |
| 16410 | Toan, John S. | Planters, corn | Jan. 13, 1857. | I. |
| 17902 | Tobias, J. C. | Collars, horse, machine for stuffing | July 23, 1857. | XVI. |
| | Todd, D., & al. (See Morgan, A. E., assignor.) | | | |
| 17121 | Tolhurst, George W. | Harrows | April 21, 1857. | I. |
| 17594 | Tollie, Mingjah | Plough, cultivator | June 16, 1857. | I. |
| 18896 | Tolman, Thomas, assignor to John P. Saben. | Mattresses, ventilating | Dec. 15, 1857. | XVII. |
| 16412 | Tolman, Thomas J. | Planes, size of the mouth in, method of adjusting the. | Dec. 15, 1857. | XIV. |
| 17120 | Tompkins, C., and J. Johnson | Bobbins, conical, machinery for winding | Jan. 13, 1857. | III. |
| 17596 | Tompkins, James | Smut-machine | April 21, 1857. | XIII. |
| 16411 | Tonks, Alfred | Fire-arms, locks for | June 16, 1857. | XIX. |
| 18164 | Torrey, E. P., and W. B. Tilton | Door-spring | Jan. 13, 1857. | II. |
| 16715 | Toutmin, Alfred F. | Brake, railroad, automatic | Sept. 8, 1857. | X. |
| 18065 | Toulmin, John | Shears, vibrating | Nov. 24, 1857. | X. |
| 16568 | Tower, Ambrose | Pump | Aug. 23, 1857. | XVIII. |
| 18087 | Towne, Lauriston | Chains, curb, machine for twisting | Feb. 3, 1857. | XI. |
| | | | Aug. 16, 1857. | II. |

| 18490 | Towne, Lauriston | Chain-machine..... | Oct. | 20, 1857..... | II. |
|-------|---|---|-------|---------------|--------------|
| | Townsend, Elmer. (See Sturtevant, Benjamin F., assignor.) | | | | |
| | Townsend, Elmer. (See Sturtevant, B. F., assignor.) | | | | |
| | Townsend, Elmer, & al. (See Butterfield & Stetson, assignors.) | | | | |
| 17946 | Trabin, J., and C. Voebel..... | Staves, &c., machine for bevelling..... | Aug. | 4, 1857..... | XIV. |
| 17241 | Trapbagen, Helen O..... | Skirts, ladies'..... | May | 5, 1857..... | XXI. |
| 17598 | Traxler, Peter..... | Stump-extractor..... | June | 9, 1857..... | IX. |
| | Treadwell, Norton, & Perry. (See Pratt, Samuel F., assignor.) | | | | |
| 16455 | Treadwell, John G..... | Stoves, cooking..... | Jan. | 20, 1857..... | V. |
| 487 | Treadwell, William E., and William Hustace, executors of Ephraim Treadwell, deceased. | Ovens..... | Aug. | 25, 1857..... | Reissue. |
| 16890 | Trescott, George F..... | Vessels, rigging..... | Mar. | 24, 1857..... | VII. |
| 16810 | Tripp, Charles..... | Mill, grinding..... | Nov. | 10, 1857..... | XIII. |
| | Tripp, E. R., & al. (See Olendorf, Tripp, & Harper.) | | | | |
| 18528 | Tripp, Leemon A., assignor to Lewis C. Platt..... | Brushes, machine for making..... | Oct. | 27, 1857..... | XVII. |
| 15170 | Tripp, Seth D., assignor to himself and Luther Hill. | Boots and shoes, pegging, machines for..... | Sept. | 8, 1857..... | XVI. |
| 18418 | Tromley, Michael..... | Fire-arms, lock for..... | Oct. | 13, 1857..... | XIX. |
| 19165 | Trott, Benjamin. (See Vaughan, John G., assignor.) | Churns..... | Sept. | 8, 1857..... | I. |
| 18936 | True, Daniel E..... | Churn..... | Dec. | 22, 1857..... | I. |
| 18112 | Truesdell, William H..... | Lathes, socket-coupling for..... | Sept. | 1, 1857..... | XIV. |
| | Trewbridge, George N..... | | | | |
| | Tryon, Dennis, and C. D. Skinner. (See Skinner & Tryon.) | | | | |
| 17242 | Tryon, Henry..... | Door-sill and door-strip, arrangement of..... | May | 5, 1857..... | IX. |
| 160 | Tucker, Hiram..... | Bed-bottoms, spring..... | June | 9, 1857..... | Add'l imp't. |
| 16344 | Tuerling, James..... | Time-pieces, maintaining power for..... | Jan. | 6, 1857..... | VIII. |
| 17302 | Tufta, Seth G..... | Fence, portable field..... | May | 12, 1857..... | IX. |
| 18215 | Tarl, John..... | Sugar-houses, drip-pots for..... | Sept. | 15, 1857..... | IX. |
| 17409 | Turl, John, assignor to Samuel Turl..... | Sugar-moulds, tips for..... | May | 28, 1857..... | IV. |
| 18355 | Turner, D. C..... | Engines, rotary steam..... | Sept. | 22, 1857..... | VI. |
| 17458 | Turner, Jonathan T..... | Filing saws for cotton-gins, machine for..... | June | 2, 1857..... | II. |
| 16616 | Tuttle, Edward A..... | Wind-wheel, self-adjusting..... | Feb. | 10, 1857..... | XI. |
| | (See Averill, D. R., assignor.) | | | | |

Patentees of inventions and designs, 1857.

| N | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|--------|
| 17398 | Tyler, Charles N., and John C. Millar. (See Millar & Tyler.) Tyler, Charles N., and W. C. Choate. (See Choate & Tyler.) Tyler, Charles N., and John Reese. (See Reese & Tyler.) Tyler, Charles N., and John Reese (See Reese & Tyler.) Umberfield, John D. (See Beardaley, Daniel S., assignor.) Underhill, Robert F. Underwood, John, and Edward A. Jenks. (See Jenks & Underwood.) Union Manufacturing Company. (See Arnold, C., and P. U. Morgan, administrators.) Union Scone Company. (See Wilson, Daniel, assignor.) | Grooves and slots, machine for cutting | May 26, 1857 | II. |
| 17347 | Upfield, William | Boot-trees | Aug. 4, 1857 | XVI. |
| 16941 | Urmv, Jesse | Harvesters, raking apparatus for | Mar. 31, 1857 | I. |
| 18616 | Urmv, Jesse | Railroads, revolving snow-excavators for | Nov. 10, 1857 | X. |
| 17759 | Ustick, Stephen | Brick-machines | July 7, 1857 | XV. |
| 18166 | Ustick, Stephen | Brick-machines | Sept. 8, 1857 | XV. |
| 18477 | Utzer, John H. Vallet & Moutier. (See Moutier & Vallet, assignors to Migeon.) | Printing-press | Oct. 20, 1857 | XVIII. |
| 17760 | Van Anden, William | File-cutting machine | July 7, 1857 | II. |
| 16662 | Vandegrift, Andrew J. | Boilers, steam, feed-water apparatus to | Feb. 17, 1857 | VI. |
| 17459 | Van De Mark, Charles | Fences, portable, method of unling the panels of | June 2, 1857 | IX. |
| 18565 | Vandenbove, Henry F. | Bedsteads, folding iron | Nov. 3, 1857 | XVII. |
| 18781 | Vanderwerken, Henry G. | Cars and carriages by horse-power, propelling | Dec. 1, 1857 | X. |
| 18929 | Vanderwerken, Henry G. | Reaping and mowing machines | Dec. 8, 1857 | I. |
| 16936 | Van Derzee, Cornelius | Separators, grab, and straw carriers | Feb. 24, 1857 | I. |

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|-------|--|---|---------------------|---------|
| 18937 | Vandolah, James, and Elias Curry..... | Churn..... | Dec. 22, 1857..... | I. |
| 18938 | Van Doren, Isaac..... | Harvesters, rakes for..... | Sept. 22, 1857..... | I. |
| 19007 | Vandusen and Near. (See Near, Jasper J., assignor.) | Nails, covering the heads of..... | Dec. 29, 1857..... | II. |
| 16501 | Van Gieson, William H., assignor to himself, S. W. Buckingham, and E. Brown. | Cans, oil..... | Jan. 27, 1857..... | XII. |
| 16502 | Van Hagen, Isaac..... | Core-boxes..... | Jan. 27, 1857..... | II. |
| 17529 | Van Horn, Abner..... | Road-scraper..... | June 9, 1857..... | IX. |
| | Van Pelt, Hiram..... | | | |
| | Van Riper, James H., and Ira Hersey. (See Hersey and Van Riper.) | | | |
| 17243 | Vansanda, Horace..... | Blind-fastenings..... | May 5, 1857..... | II. |
| 17709 | Van Vleck, C..... | Compounds, resinous, for covering hams..... | June 30, 1857..... | IV. |
| 16425 | Vaughan, Jacob..... | Saws, hand, method of adjusting to circular stocks..... | Nov. 17, 1857..... | IX. |
| | Vaughan, John G., assignor to Benjamin Troth, assignor to Isaac M. Singer. | Lathing and plastering, mode of..... | Nov. 13, 1857..... | |
| 18364 | Vedder, Albert A..... | Lubricating carriage-axes..... | Oct. 6, 1857..... | XII. |
| 877 | Vedder, N. S., assignor to Galbraith & Cassel..... | Stoves, radiator..... | Mar. 24, 1857..... | Design. |
| 865 | Vedder, N. S., assignor to Newberry, Filley, & Co. | Stoves, cooking..... | Jan. 13, 1857..... | Design. |
| 900 | Vedder, N. S., assignor to North, Chase, & North. | Stoves..... | June 23, 1857..... | Design. |
| 911 | Vedder, N. S., assignor to North, Chase, & North. | Stoves..... | July 14, 1857..... | Design. |
| 938 | Vedder, N. S., assignor to North, Chase, & North. | Stoves..... | Sept. 1, 1857..... | Design. |
| 878 | Vedder, N. S., assignor to John S. and Merritt Peckham. | Stoves, cooking..... | Mar. 24, 1857..... | Design. |
| 884 | Vedder, N. S., assignor to Smith & Sheldon..... | Stove, cooking, plates of a..... | April 14, 1857..... | Design. |
| 866 | Vedder, N. S., assignor to Wolf & Warren..... | Stoves, cook..... | Jan. 27, 1857..... | Design. |
| 867 | Vedder, N. S., assignor to Wolf & Warren..... | Stoves, parlor cook..... | Jan. 27, 1857..... | Design. |
| 18478 | Vick, E. A..... | Cultivator, cotton..... | Oct. 20, 1857..... | I. |
| 17612 | Vickerstaff, Joseph, assignor to Martin Landinberger. | Fabrics, knitted..... | June 16, 1857..... | III. |
| | Voebel and Trabin. (See Trabin & Voebel.) | | | |
| 17345 | Vogt, William, and John J. Klink..... | Stud or button, shirt..... | May 19, 1857..... | XXI. |
| 902 | Vose, Samuel D..... | Stove ornaments..... | July 7, 1857..... | Design. |
| 903 | Vose, Samuel D..... | Stove ornaments..... | July 7, 1857..... | Design. |
| 904 | Vose, Samuel D..... | Stove ornaments..... | July 7, 1857..... | Design. |
| 17004 | Wade, R. M..... | Car-brakes, railroad..... | April 7, 1857..... | X. |
| 18653 | Wadsworth, H. N..... | Tooth-brushes..... | Nov. 17, 1857..... | XVII. |
| 17999 | Wagner, I. Z. A., assignor to P. H. Watson, assignor to E. S. Renwick. | Bricks, moulding, machines for..... | Aug. 11, 1857..... | XV. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date | Class. |
|-------|---|--|---------------------|----------|
| 17761 | Walt, F. A..... | Pens, metallic..... | July 7, 1857..... | XVIII. |
| 18652 | Wakelee, W. P., and James Thompson. (See Thompson & Wakelee.) | | | I. |
| 16813 | Wakeley, William..... | Drills, self-feeding..... | Nov. 17, 1857..... | X. |
| 18676 | Wakeman, Zalmon B..... | Coaches, tongues of, mode of supporting the..... | Mar. 10, 1857..... | VI. |
| 17903 | Walker, F. R..... | Boilers, steam..... | Dec. 16, 1857..... | VI. |
| 17005 | Wallace, John..... | Engines, steam, oscillating..... | July 28, 1857..... | III. |
| 18628 | Wallwork, Milton..... | Rope, making, machinery for..... | April 7, 1857..... | II. |
| 17530 | Walsh, Cornelius and Zachariah, assignors to Cornelius Walsh. | Nails, trunk, machine for polishing the heads of..... | Oct. 13, 1857..... | V. |
| 18372 | Walsh, John C..... | Gas-burners..... | June 12, 1857..... | II. |
| 17762 | Walsh, Zachariah, assignor to Cornelius Walsh..... | Metal caps for nail heads, machine for cutting..... | Oct. 6, 1857..... | XIV. |
| 17711 | Walton, George W., and Henry Edgarton..... | Lathes for beaded work, mode of operating radial cutters in..... | July 7, 1857..... | IV. |
| 422 | Walton, John..... | Condensing liquids in gas main pipes..... | June 30, 1857..... | Release. |
| 490 | Walton, William H..... | Carding-engines, cleaning the top flats of..... | Jan. 13, 1857..... | Release. |
| 18257 | Walton, William H., and George H. Phinney..... | Carding-engines..... | Sept. 1, 1857..... | III. |
| 16414 | Walworth, Caleb C..... | Carding-engines..... | Sept. 22, 1857..... | II. |
| 16663 | Walworth, Caleb C..... | Screw-feeding gear..... | Jan. 13, 1857..... | IX. |
| 17851 | Wanda, John B..... | Pipe, gas, machine for fitting..... | Feb. 17, 1857..... | XVIII. |
| 16856 | Wapenstein, J..... | Roofing compositions..... | July 21, 1857..... | |
| 18817 | Warburton, James, and Samuel C. Lister. (See Lister & Warburton) | Seals, metallic..... | Mar. 19, 1857..... | VI. |
| 16503 | Ward, A. F..... | Engines, &c., steam governors of..... | July 14, 1857..... | XIX. |
| 18876 | Ward, James N..... | Fire-arms, flint-lock, mode of altering, to percussion | Jan. 27, 1857..... | XIX. |
| 18716 | Ward, James N..... | Bayonet-fastening..... | Dec. 15, 1857..... | I. |
| 18699 | Ward, L. F..... | Planters, seed..... | Nov. 24, 1857..... | I. |
| | Ward, L. F..... | Planters, seed..... | Dec. 29, 1857..... | |
| | Ward, M. L., S. Thurston, and Huntington & Co. (See Thurston, Stephen, assignor.) | Saddles, riding..... | Jan. 6, 1857..... | XVI. |
| | Ward, Seth..... | | | |

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|-------|--|---|----------------|--------|
| 18782 | Ward, W. H. | Moulding shells, machine for. | Dec. 1, 1857 | II. |
| 18479 | Ward, William E. | Spalling land, machine for | Oct. 20, 1857 | I. |
| 18616 | Ward, William H. | Bullet-machine. | Nov. 10, 1857 | XIX. |
| 18631 | Warden, William R. | Vessels, water in the holds of, apparatus for indicating the height of. | Feb. 10, 1857 | VII. |
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| | Warder, Brokaw, & Child. (See Harding, Thomas.) | | | |
| | Warder, Brokaw, & Child. (See Brokaw, John W., assignor.) | | | |
| | Warden, Brokaw, & Child. (See Brokaw & Harding, assignors) | | | |
| 16314 | Wardwell, C. P. S. | Sawing, circular, machine. | March 10, 1857 | XIV. |
| 17636 | Wardwell, C. F. S. | Hoops, cheese. | June 9, 1857 | XII. |
| 17125 | Wardwell, Charles P. S. | Pipes, &c., clay, machines for forming. | April 21, 1857 | XV. |
| 17597 | Wardwell, Jeremy B. | Mowing-machines. | June 16, 1857 | I. |
| 17948 | Warlick, Noah | Bath, shower, apparatus. | Aug. 4, 1857 | XX. |
| 18480 | Warlick, Noah | Ploughs | Oct. 20, 1857 | I. |
| 17904 | Warner, James | Fire-arms. | July 28, 1857 | XIX. |
| | Warner, W. H. (See Blake, Henry D.) | | | |
| | Warren & Wolfe. (See Vedder, N. S., assignor.) | | | |
| 18365 | Warren & Wolfe. (See Vedder, N. S., assignor.) | | | |
| | Warren, A. F. | | | |
| 17905 | Warren, Charles | Pen, fountain. | Oct. 6, 1857 | XVIII. |
| | | Boot and shoe soles, trimming the edges of, edge planes for. | July 28, 1857 | XVI. |
| | Warren, John. (See Critcherson, John, assignor.) | | | |
| 16315 | Warren, Samuel D. | Grain-craddles. | March 10, 1857 | I. |
| 17656 | Warren, Sylvester W., assignor to himself and Dexter N. Force) | Steam-whistles | June 23, 1857 | VI. |
| | Warren, John. (See Deacon, Edward, assignor.) | | | |
| 18216 | Warring, Charles B. | Gas-apparatus, illuminating | Sept. 15, 1857 | IV. |
| 16316 | Washburn, Carver | Hoop-pole machines, method of operating the splitting knife in. | March 10, 1857 | XIV. |
| | | Brick-machines. | April 21, 1857 | XV. |
| 17131 | Washburn, G. T., and C. H. Bellows, assigns to themselves and C. Washburn. | Brick-machines | Sept. 15, 1857 | XV. |
| 18226 | Washburn, G. T., assignor to himself and Anson S. Hobart. | Wool on the pelt, burring, machinery for. | Nov. 3, 1857 | III. |
| 18564 | Waterhouse, John | | | |
| | Waterman, C., administratrix, and J. D. Russell. (See Russell & Waterman.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|----------|
| 438 | Waterman, Cornelia, administratrix of the late Stephen Waterman, and assignee of Isaac D. Russell, joint inventor and patentee. | Sawing off logs, machine for | March 17, 1857..... | Reissue. |
| 469 | Waterman, Cornelia, administratrix of the late Stephen Waterman and Isaac D. Russell. (See Waterman, John, and Joshua Ketcham. (See Ketcham & Waterman.) | Ships' blocks..... | June 9, 1857..... | Reissue. |
| 965 | Waters, Elisha | Match-boxes | Nov. 17, 1857..... | Design. |
| 18998 | Waters, Elisha | Head-rests | Dec. 29, 1857..... | X. |
| 18113 | Watrous, James A..... | Eave-troughs, apparatus for suspending | Sept. 1, 1857..... | IX. |
| 18419 | Watrous, James A..... | Sacks, &c., string-fastening for | Oct. 13, 1857..... | XIII. |
| 18877 | Watrous, Richard N..... | Drawing-knife | Dec. 15, 1857..... | XIV. |
| 18622 | Watrous, William H..... | Wool-cleaning machines | Feb. 10, 1857..... | III. |
| 18413 | Watson, David | Reaping and mowing machines | Jan. 13, 1857..... | I. |
| 16763 | Watson, P. H. (See Wagner, J. T. A., assignor.) | Harvesters | March 3, 1857..... | I. |
| 18834 | Watson, W. C., assignor to himself and George H. Wooster. | Sewing-machines..... | Dec. 8, 1857..... | III. |
| 18000 | Watson, W. C., assignor to himself, G. H. Wooster, and J. W. Gregory. | Sewing-machines..... | Aug. 11, 1857..... | III. |
| 18371 | Watson, William C., assignor to himself, George H. Wooster, and Ira W. Gregory. | Sewing-machines..... | Oct. 6, 1857..... | III. |
| 506 | Watt, George..... | Ploughs..... | Nov. 10, 1857..... | Reissue. |
| 17710 | Watt, William..... | Starch from maize..... | June 30, 1857..... | IV. |
| 17771 | Waters, Thomas, assignor to himself and Stephen Sherlock. | Stoves, gas | July 7, 1857..... | V. |
| 17399 | Watles, Otis B..... | Tanning-apparatus | May 28, 1857..... | XVI. |
| 18001 | Way, W. John. (See Stacy, M. E., assignor.) | Turning spools, machines for..... | Aug. 11, 1857..... | XIV. |
| 17816 | Weatherington, Melyn | Temon-cutters, round, method of adjusting, to certain fixed sizes. | July 14, 1857..... | XIV. |

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|-------|--|---|----------------------|--------------|
| 16699 | Webb, John W | Cotton-gins, manufacturing ribs for | Feb. 24, 1857 | III. |
| 17046 | Webber, Elbridge | Shingle-machine | July 28, 1857 | XIV. |
| 17763 | Webber, Ira J | Car-brakes, railroad, method of applying | July 7, 1857 | X. |
| 18638 | Webber, William, Jr., and John Webber | Harvesters | Dec. 22, 1857 | I. |
| 18764 | Weber, Joseph | Hulling and scouring wheat, &c., machines for | Mar. 3, 1857 | I. |
| 18481 | Webster, D. A., and G. F. Burroughs | Castings, core-splindle for | Oct. 20, 1857 | II. |
| 18654 | Webster, Thomas K. | Key for door-locks | Nov. 17, 1857 | II. |
| 18559 | Webster, William | Window-sashes, hanging | Feb. 3, 1857 | IX. |
| 18664 | Webster, William | Boilers, steam, dampor-regulators for | Feb. 17, 1857 | VI. |
| 18835 | Weddle, John B., et al. (See Morgan, A. E., as signor.) | Vessels, steering-apparatus for | Dec. 8, 1857 | VII. |
| 18003 | Weed, Charles, assignor to himself and Stephen B. Cram. | Augur-bit, expanding | Aug. 11, 1857 | XIV. |
| 18002 | Weeks, Asa, assignor to himself and Orin W. Fiske. | Furnaces, hot-air | Aug. 11, 1857 | V. |
| 17535 | Weeks, Daniel P., assignor to himself and Eben Seavey. | Paper, folding, machines for | July 7, 1857 | XXIII. |
| 16415 | Weeks, James F. | Loom, power | Jan. 13, 1857 | III. |
| 16515 | Weimer, P. L., and S. P. Francisco, assignors to S. P. Francisco. | Valve of steam-hammers, operating | Jan. 27, 1857 | V. |
| 473 | Weis, Joseph | Mills, flouring | June 16, 1857 | Reissue. II. |
| 16560 | Weisenborn, H. | Furnaces, blast | Feb. 3, 1857 | IV. |
| 17949 | Welling, Will am M. | Ivory, factitious | Aug. 4, 1857 | III. |
| 16504 | Wellman, George | Carding-engines, the top flats of, machinery for strip- ping. | Jan. 27, 1857 | XXII. |
| 16942 | Wellman, Marion J. | Baby-jumper | Mar. 31, 1857 | VI. |
| 17968 | Wells, D. G. | Gauges, steam | Aug. 11, 1857 | XII. |
| 17124 | Wells, Hiram | Cana, oil | April 21, 1857 | XIV. |
| 17537 | Wells, Hiram | Saw-mill blocks, automatic | June 9, 1857 | XIX. |
| 18217 | Wells, Lemuel | Cartridges, ball | Sept. 15, 1857 | XVI. |
| 18297 | Wells, Parker, assignor to Samuel Mower | Boot and shoe sole cutter | Sept. 15, 1857 | III. |
| 17400 | Wells, Thomas S. | Sewing-machines | May 26, 1857 | XVI. |
| 18678 | Wells, William, assignor to Edgar L. Stevens | Boots and shoes, pegging, machines for | Dec. 15, 1857 | XVI. |
| | Welsh, J. A., and J. B. Gowdy. (See Gowdy & Welsh.) | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------------|---------------|
| 16631 | Wendt, John R., assignor to J. R. Wendt and Augustus Rogers | Metallic beads, manufacture of | Feb. 10, 1857 | II. |
| 16346 | Wentworth, Henry S | Wind-mills, self-regulating wind-indicator for .. | Jan. 6, 1857 | XI. |
| 17465 | Werner, Charles F | Gas-generators, wood | June 2, 1857 | IV. |
| 18218 | Werner, J. Robert | Photographic cameras, diaphragms for | Sept. 15, 1857 | XVIII. |
| 16665 | Wesson, William D | Telegraphs, electric | Feb. 17, 1857 | VIII. |
| | West, Canfield, & Co. (See Batcheller, L. B., assignor.) | | | |
| | West, Henry B., & al. (See Wilson, H. F., assignor.) | | | |
| 18909 | West, J. D | Pumps | Sept. 29, 1857 | XI. |
| 491 | West, James | Roofing-composition | Sept. 8, 1857 | Reissue. |
| 174 | Westbrook, Leonardo | Stereotype-compositions, gutta-percha | July 28, 1857 | Add'l imp'ts. |
| 17464 | Westcott, Amos | Door-bolt | June 2, 1857 | II. |
| | Westerfield, G. W., and S. C. Thompson. (See Ritchie, Henry, assignor.) | | | |
| 17969 | Westlake, William | Kettle, tea | Aug. 11, 1857 | V. |
| 18939 | Wetherell, Lorin | Cultivators | Dec. 22, 1857 | I. |
| 16362 | Wetherill, Samuel | Processes for reducing zinc ores | Jan. 6, 1857 | IV. |
| 17598 | Wetmore, J. W | Vessels, means for propelling, in shoal water | June 16, 1857 | VII. |
| | Wheeler & Wilson Manufacturing Company. (See Larkin, Samuel, assignor.) | | | |
| 17006 | Wheeler, C. H | Curtain rollers, fixtures for | April 7, 1857 | XVII. |
| 17059 | Wheeler, C. H | Curtain-fixtures | April 14, 1857 | XVII. |
| 16505 | Wheeler, E | Metal, forging, machines for | Jan. 27, 1857 | II. |
| 16506 | Wheeler, Elbridge | Clamping-machine | Jan. 27, 1857 | II. |
| 18115 | Wheeler, Elbridge | Metal, forging, machine for | Sept. 1, 1857 | II. |
| 18940 | Wheeler, Elbridge | Horse-shoes, bending, machine for | Dec. 22, 1857 | II. |
| 16765 | Wheeler, Norman W | Valves for steam-engines, operating | Mar. 3, 1857 | VI. |
| 18253 | Wheeler, Norman W | Valve-gear for oscillating steam-engines | Sept. 22, 1857 | VI. |
| 867 | Wheeler, Russell, and Stephen A. Bailey | Stoves | May 19, 1857 | Design. |

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|--|--|---|---------------------|-------|
| Winfield, Henry, and J. A. Jilison. (See Jilison & Winfield) | Whipple, Carlyle..... | Saws, reciprocating, method of hanging and operating..... | Jan. 13, 1857..... | XIV. |
| Whipple & Haskell. (See Hutchinson, James, assignor.) | Whipple, Cullen..... | Wool, combing, machines for..... | May 5, 1857..... | III. |
| Whipple, Carlyle..... | Whipple, Heman..... | Squares, carpenters', machines for stamping figures on..... | Mar. 10, 1857..... | XIV. |
| 16416 | Whipple, Heman..... | Squares, carpenters', machines for graduating..... | Mar. 17, 1857..... | XIV. |
| 17344 | Whipple, Milton D., assignor to A. B. Ely..... | Fibrous materials, combing, machines for..... | Mar. 17, 1857..... | III. |
| 16817 | Whipple, Milton D., assignor to A. B. Ely..... | Cloth, shearing, machine for..... | Dec. 1, 1857..... | III. |
| 16857 | Whipple, Milton D., assignor to Alfred B. Ely..... | Spinning flax and hemp, machinery for..... | Oct. 27, 1857..... | III. |
| 16865 | Whitaker, Harry..... | Boilers, steam..... | July 14, 1857..... | VI. |
| 16796 | Whitaker, Isaac N..... | Corn, ears of, hand implement for severing the butts and separating husks from..... | June 2, 1857..... | I. |
| 18529 | Whitaker, John T., and Calvin D. Reed..... | Reaping and mowing machines, finger-bar for..... | Aug. 11, 1857..... | I. |
| 17648 | Whitaker, S. H..... | Nut-machines..... | Jan. 27, 1857..... | II. |
| 17466 | Whitaker, S. H..... | Nut-machine..... | Sept. 22, 1857..... | II. |
| 17990 | Whitaker, Samuel H..... | Nut-machine..... | June 9, 1857..... | II. |
| 16507 | Whitaker, S. H., and Ezra Cope..... | Valve, safety, thermo-pneumatic..... | May 26, 1857..... | XI. |
| 16507 | Whitaker, S. H., and Ezra Cope..... | Vermine-destroyer..... | Jan. 27, 1857..... | XXII. |
| 17534 | Whitaker, Welcome, assignor to Henry S. Palmer and Julius A. Skilton..... | | | |
| 17401 | White, Isaac, & al. (See Elliot, David, assignor.) | | | |
| 18516 | White, James M..... | Axles, hubs to, mode of attaching..... | Mar. 24, 1857..... | X. |
| 18891 | White, Leroy S., assignor to S. S. Rogers, E. W. Sperry, James H. Ahmhead, and Edmund Hurlbut..... | Dies for punching fork tines..... | June 2, 1857..... | II. |
| 17475 | White, Lewis, assignor to himself and Elihu P. White..... | Curtain-rollers, fixtures for..... | July 28, 1857..... | XVII. |
| 17911 | White, Patrick..... | Boilers, steam, damper-regulators for..... | June 9, 1857..... | VI. |
| 17533 | White, T. W..... | Planters, cotton-seed..... | Oct. 20, 1857..... | I. |
| 18482 | Whitehall, Nicholas, assignor to N. & A. S. Whitehall..... | Cultivators..... | Oct. 27, 1857..... | I. |
| 18550 | Whitehead, E. W. and J. L. Conklin..... | Gas generators..... | June 16, 1857..... | II. |
| 17699 | Whitehead, Jesse..... | Planters, seed..... | May 26, 1857..... | I. |
| 17402 | Whitehead, Jesse..... | Furrows in land, water, machines for dressing..... | June 2, 1857..... | I. |
| 17467 | Whitehead, Lewis..... | Curtain-fixtures..... | Dec. 15, 1857..... | XVII. |
| 18678 | Whiteley, Edward..... | Boilers, steam, water-gauges for..... | Oct. 13, 1857..... | VI. |
| 18420 | | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|---------------------|--------------|
| 16392 | Whitin, John C. (See Mattison, William, assignor.) | Locks..... | Mar. 24, 1857..... | II. |
| 17815 | Whitin, John C. (See Campbell, Samuel, assignor.) | Locks..... | July 14, 1857..... | II. |
| 16593 | Whiting, William, and Henry Pickford..... | Shingle-machine..... | Feb. 3, 1857..... | XIV. |
| 16418 | Whiting, William A..... | Clock, calendar..... | Jan. 13, 1857..... | VIII. |
| 16363 | Whitmore, M. J., assignor to himself and F. G. Johnson. | Tubes, cap, making..... | Jan. 6, 1857..... | II. |
| 17992 | Whitmore, Nathaniel, assignor to himself and G. W. Keene. | Wooden surfaces, planed, machines for smoothing..... | Aug. 11, 1857..... | XIV. |
| 17818 | Whitney, Baxter D..... | Bedsteads, bureau..... | July 14, 1857..... | XVII. |
| 17991 | Whitney, Ethan..... | Squares, try, adjustment for..... | Aug. 11, 1857..... | VIII. |
| 17814 | Whitton, E. F..... | Centering-machine..... | July 14, 1857..... | II. |
| 16417 | Whittemore, D. H..... | Apples, paring and slicing, machines for..... | Jan. 13, 1857..... | XVII. |
| 16666 | Whittemore, David H..... | Apples, paring, machines for..... | Feb. 17, 1857..... | XVII. |
| 18663 | Whittier, Charles..... | Engines, &c., steam, vane-governor for..... | Nov. 3, 1857..... | VI. |
| 18310 | Whorf, Sylvanus H..... | Leads, hollow metallo..... | Sept. 29, 1857..... | XVI. |
| 16419 | Wickersham, John B..... | Iron fences, method of fastening the rails of, in the posts..... | Jan. 13, 1857..... | II. |
| 16762 | Wickersham, John B..... | Cars, railroad, guide-wheels for..... | Mar. 3, 1857..... | X. |
| 17460 | Wickersham, John B..... | Bedsteads, folding..... | June 2, 1857..... | XVII. |
| 17461 | Wickersham, John B..... | Hat-stands..... | June 2, 1857..... | XVII. |
| 19068 | Wickersham, William. (A)..... | Sewing-machines..... | Aug. 26, 1857..... | III. |
| 18089 | Wickersham, William. (B)..... | Sewing-machines..... | Aug. 26, 1857..... | III. |
| 178 | Weeks, Loren J..... | Straw-cutters..... | Oct. 13, 1857..... | Add'l Imp't. |
| 18311 | Wiegand, S. L..... | Valves of steam-engines, operating the variable eccentrics for..... | Sept. 29, 1857..... | VI. |
| 18075 | Wiehl, Daniel. (See McMurtry, John, assignor.) | Paper, folding, machines for..... | Aug. 25, 1857..... | XVIII. |
| | Wiggins, C. Pyle, A. H. Nordyke, and B. Straw-bridge. | | | |
| | Wight, W. W., and N. Scholfield. (See Scholfield & Wight, assignors.) | | | |

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|-------|--|---|----------------|------------|
| 16493 | Wright, William W., and N. Scholtfield. (See Scholtfield & Wright, assignors.) | Pressing, oil, machinery | Jan. 13, 1857 | XII. |
| 16509 | Wilber, William | Hulling and separating cotton-seed, machine for | Jan. 27, 1857 | I. |
| 16508 | Wilber, William | Mills for tempering oleaginous seeds | Jan. 27, 1857 | XII. |
| 18387 | Wilber, William | Pressing, oil, machinery | Oct. 6, 1857 | XXI. |
| 17080 | Wilcox, Ducee | Studs, shprt. | April 14, 1857 | XX. |
| 16490 | Wilcox, O. D. | Legs, artificial | Jan. 13, 1857 | XVIII. |
| 18618 | Wilcox, Stephen, jr. | Printing-presses | Nov. 10, 1857 | VII. |
| 17192 | Wilcox, William | Surge or cable springs | April 21, 1857 | Extension. |
| | Wilder, Benjamin G., assignor to Daniel Fitzgerald. | Safes, fire-proof, chests, &c. | May 30, 1857 | |
| 18421 | Wiler, J. W., S. B. Sturges, and G. McFall. | Carriage, hose. | Oct. 13, 1857 | X. |
| 18167 | Wilkes, Samuel | Furnace, blast | Sept. 8, 1857 | II. |
| 18114 | Wilkins, John N. | Saw-teeth, planing, machine for | Sept. 1, 1857 | XIV. |
| 16367 | Willard, H. A. | Vegetables, cutting, machine for | Feb. 17, 1857 | XVII. |
| 18366 | Willard, Hosea | Planters, seed | Oct. 6, 1857 | I. |
| 18563 | Willard, Hosea, and Robert Ross | Harvesters | Nov. 5, 1857 | II. |
| 17245 | Williams, A., and E. P. Cummings | Looks | May 26, 1857 | XIV. |
| 17403 | Williams, Albert | Gauge, compound | May 26, 1857 | Release. |
| 503 | Williams, Irvin A. | Lamp, locomotive | Oct. 27, 1857 | |
| | Williams, J., and B. Killmer. (See Killmer & Williams.) | | | |
| 16532 | Williams, John H. | Wheels, setting tires on, machine for | June 9, 1857 | X. |
| 17410 | Williams, Thomas W., assignor to himself and Henry T. Hoyt. | Axles, nuts on, scouring | May 26, 1857 | X. |
| 17081 | Williams, W. L. | Wood, splitting, machines for | April 14, 1857 | XIV. |
| 18280 | Williamson, George | Diving apparatus | Sept. 22, 1857 | VII. |
| 17600 | Willis, James | Umbrellas and parasols | June 16, 1857 | XXI. |
| 18074 | Willmott, William W., assignor to himself and Amos H. and Charles H. Brainard. | Boot-crimps | Aug. 25, 1857 | XVI. |
| 17087 | Willmott, William W., assignor to himself and Henry F. Gardner. | Boot-trees | April 14, 1857 | XVI. |
| 17462 | Willoughby, J. D. | Plough-clevis | June 2, 1857 | I. |
| 971 | Willoughby, James D. | Plough-springs, &c., trade-marks on | Dec. 22, 1857 | Design. |
| 17719 | Willson, H. F., assignor to himself and Henry B. West. | Sawing-apparatus, cross-cut | June 30, 1857 | XIV. |
| 17303 | Wilman, Louis | Soap substitute for scouring woollens | May 12, 1857 | IV. |
| 18361 | Willmot, S. R. | Trap, fly | Sept. 22, 1857 | XXII. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------|------------------|
| 424 | Wilnot, Samuel B. | Sawing-machines, portable steam. | Jan 27, 1857 | Reissue. VI. |
| 16668 | Wilnot, Samuel R. | Valves of steam-engines, operating. | Feb. 17, 1857 | Reissue. |
| 447 | Wilnot, Samuel R. | Sawing-machines, cross-cut, portable steam. | April 7, 1857 | (Division.) XIV. |
| 17601 | Wilnot, Samuel R., and R. G. Fairbanks. | Sawing-machine, portable steam. | June 16, 1857 | II. |
| 17474 | Wilnot, Samuel R., assignor to Samuel B. Guernsey. | Door-bolts. | June 2, 1857 | |
| 18784 | Wilson & Wheeler Manufacturing Company. (See Larkin, Samuel, assignor.) | Lanterns, gas-lighting. | Dec. 1, 1857 | V. |
| 16818 | Wilson, Abel. | Wind wheels, self-regulating. | Mar. 10, 1857 | XI. |
| 17650 | Wilson, Abner P. | Excavating tunnels, machines for. | June 23, 1857 | IX. |
| 871 | Wilson, Charles. | Stoves, parlor cooking. | Feb. 10, 1857 | Design. XI. |
| 16943 | Wilson, Daniel, assignor to Union Stove Company. | Wind-mills, sails or vanes of, method of feathering the. | Mar. 31, 1857 | |
| 17062 | Wilson, J. C., and T. G. | Threshing grain in the field, machines for. | April 14, 1857 | I. |
| 19123 | Wilson, J. C., and T. G. | Harvesters. | April 21, 1857 | I. |
| 16944 | Wilson, James, Charles Green, and William Wilson, jr. | Gunpowder keg. | Mar. 31, 1857 | XIX. |
| 18004 | Wilson, William, jr., assignor to Wilson, Green, & Wilson, jr. | Press, drop. | Aug. 11, 1857 | XII. |
| 17764 | Wimmer, William. | Hedges, trimming, machines for. | July 7, 1857 | I. |
| 471 | Winans, Ross and Thomas. | Locomotive-tenders. | June 16, 1857 | Reissue. |
| 470 | Winans, Ross and Thomas. | Locomotive fire-box. | June 16, 1857 | Reissue. |
| 17712 | Winans, Thomas. | Valve, slide, for steam engines. | June 30, 1857 | VI. |
| 17178 | Winch, Corydon. | Railroad chair machine. | April 23, 1857 | IX. |
| 18717 | Winder, Caleb B. | Planters, seed. | Nov. 24, 1857 | I. |
| 17047 | Winder, Daniel. | Printers' composing sticks. | April 7, 1857 | XVIII. |
| 16669 | Winder, Daniel K. | Water, raising, method of. | Feb. 17, 1857 | XI. |
| 17463 | Winder, Daniel K. | Printing-presses. | June 2, 1857 | XVIII. |
| 19000 | Windhausen, F. | Locomotive engines for producing increased adhesion to the rails when required. | Dec. 29, 1857 | VI. |

| | | | | |
|-------|---|---|---------------------|----------|
| 18536 | Winger, Jacob G. | Scrapers, cotton..... | Oct. 27, 1857..... | I. |
| 16624 | Winne & Abel. (See Gibbs, S. W., assignor.) | Sawing, re, lumber, machine for..... | Feb. 10, 1857..... | XIV. |
| 17649 | Winne, Simon P. | India rubber cloth, elastic, repairing..... | June 23, 1857..... | IV. |
| 17950 | Winslow, Charles. | Cloth, elastic gore..... | Aug. 4, 1857..... | III. |
| 402 | Winslow, Charles. | Cloth, elastic gore..... | Sept. 15, 1857..... | Release. |
| 17179 | Winslow, John A. | Skates..... | April 23, 1857..... | XXII. |
| 17063 | Winslow, Lorenzo. | Axles, hubs to, mode of attaching..... | April 14, 1857..... | X. |
| 16753 | Winston, Robert B. | Ploughs..... | Dec. 1, 1857..... | I. |
| 16431 | Winter, A. | Saws, "muley," method of hanging, guiding, and adjusting..... | Jan. 13, 1857..... | XIV. |
| 16323 | Wiener, Joel | Railroads, locomotive cow-catchers for..... | Feb. 10, 1857..... | IX. |
| 18453 | Wiener, Joel | Washing-machine..... | Oct. 20, 1857..... | XVII. |
| 17008 | Witherell, Ransom. | Chair, invalid..... | April 7, 1857..... | XVII. |
| 18785 | Withers, A. Quarles. | Cultivators..... | Dec. 1, 1857..... | I. |
| 16240 | Withrell, S. J., and E. P. Morgan. | Engines, shaping..... | March 31, 1857..... | VI. |
| 16293 | Witting, F. W. | Wind-wheels, sails of, mode of regulating velocity and furling the..... | March 24, 1857..... | XI. |
| 16766 | Wolcott, A. and A. S. | Liquors, aging, devices for..... | March 3, 1857..... | IV. |
| 17346 | Wolfe, H. R. | Saws, circular, device for allowing play to the arbors of..... | May 19, 1857..... | XIV. |
| 18169 | Wollston, Philip N. | Washing-machines..... | Sept. 8, 1857..... | XVII. |
| 17613 | Walvin, John G., assignor to himself and George Peckham. | Vault, ventilating, and platform-light..... | June 16, 1857..... | IX. |
| 16595 | Wunbaugh, M. M., and A. C. Martin. (See Martin & Wunbaugh.) | Wind-wheels, velocity of, method of regulating..... | March 24, 1857..... | XI. |
| 18067 | Wood, A. W. | Washing-machines..... | Aug. 25, 1857..... | XVII. |
| 4320 | Wood, Abram. | Brewers' coolers..... | Sept. 15, 1857..... | IV. |
| 17993 | Wood, Adam. | Stone and glass, polishing, machines for..... | Aug. 11, 1857..... | XV. |
| 18561 | Wood, George H. | Drills, rock..... | Nov. 3, 1857..... | IX. |
| 16863 | Wood, George H. | Stump-extractor..... | Feb. 3, 1857..... | IX. |
| 18619 | Wood, Jason S. | Ploughs, sub-soil..... | Nov. 10, 1857..... | I. |
| 16458 | Wood, John, and Reuben North. | Rope or cordage, unmaking, machines for..... | March 17, 1857..... | III. |
| 16423 | Wood, Joseph. | Stove-thimbles or deck-irons..... | Jan. 13, 1857..... | V. |
| | Wood, Lofis | | | |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|--|--|---------------------|--------------|
| 880 | Wood, Robert..... | Railings, iron..... | April 7, 1857..... | Design. I. |
| 17772 | Wood, S. W., assignor to Lewis H. Parsons..... | Rakes, hay..... | July 7, 1857..... | Design. |
| 892 | Wood, Thomas H., Henry S. Hubbell, and John E. Roberts. | Stoves, cooking..... | June 2, 1857..... | |
| | Wood, W. P., and Samuel DeVaughan. (See Hedge, assignor.) | | | |
| 16618 | Wood, Walter A., (A)..... | Harvesting-machines..... | Feb. 10, 1857..... | I. |
| 16619 | Wood, Walter A., (B)..... | Harvesting-machines..... | Feb. 10, 1857..... | I. |
| 16620 | Wood, Walter A., (C)..... | Harvesting-machines..... | Feb. 10, 1857..... | I. |
| 19001 | Wood, Walter A., (1)..... | Harvesters..... | Dec. 29, 1857..... | I. |
| 19002 | Wood, Walter A., (2)..... | Harvesters..... | Dec. 29, 1857..... | I. |
| 16361 | Wood, William..... | Brick-machines..... | Feb. 3, 1857..... | XV. |
| 17907 | Wood, William..... | Shingle-machines, method of feeding the bolt in..... | July 28, 1857..... | XIV. |
| 168 | Wood, William P..... | Sawing-machines..... | June 23, 1857..... | Add'l imp't. |
| 18066 | Woodard, Stephen..... | Sawing-machines, cross-cut, method of clamping logs in..... | Aug. 26, 1857..... | XIV. |
| | | Horse-powers, portable..... | Aug. 18, 1857..... | XIII. |
| 18028 | Woodbury, Daniel..... | Planing-machines..... | March 31, 1857..... | Reissue. |
| 444 | Woodbury, James A..... | | | |
| | Woodbury, Joel. (See Ellia, Joel A. H., assignor.) | | | |
| | Woodbury, S. D., and N. A. Dyar. (See Dyar, Nathan A., assignor.) | | | |
| | Woodin, W. H., and M. W. Jackson. (See Steffe, Horton, & Currie, assignors.) | | | |
| 16511 | Wooding, Erasmus D..... | Seeding-machines..... | Jan. 27, 1857..... | I. |
| | Woodman, A. F., and M. G. Farmer. (See Farmer & Woodman.) | | | |
| 18787 | Woodman, Horace..... | Carding-machines, cleaning the top cards of machinery for..... | Dec. 1, 1857..... | III. |
| 514 | Woodman, Horace..... | Carding-machines, cleaning top cards of..... | Dec. 8, 1857..... | Reissue. |
| 16347 | Woodruff, George P..... | Buckles..... | Jan. 1, 1857..... | XVI. |
| 17126 | Woodville, John..... | Bolting-cloths to reels, mode of attaching..... | April 31, 1857..... | XIII. |
| 17352 | Woodville, John..... | Vessels, shot-holes in, means for stopping..... | July 21, 1857..... | VII. |

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|-------|--|---|---------------------|----------|
| 16700 | Woodward, David A..... | Camera, solar..... | Feb. 24, 1857..... | XVIII. |
| 17602 | Woodward, Edward F..... | Skirts, ladies'..... | June 16, 1857..... | XXI. |
| 601 | Woodward, Edward F..... | Skirts, ladies'..... | Sept. 22, 1857..... | Release. |
| 18484 | Woodward, John A..... | Skirt-machines..... | Oct. 20, 1857..... | XIII. |
| 16510 | Woodworth, Thomas J..... | Smut-machines..... | Jan. 27, 1857..... | VII. |
| | Woodworth, William W. (See Carpenter, Simon W., assignor.) | Vessels, masts in the decks of, supporting..... | | |
| 16894 | Woolston, George F..... | Sawing-machine, circular..... | Mar. 24, 1857..... | XIV. |
| | Wooster, G. H., & al. (See Watson, W. C., assignor.) | | | |
| | Wooster, George H., & al. (See Watson, W. C., assignor.) | | | |
| | Wooster, George H., & al. (See Watson, William C., assignor.) | | | |
| 18617 | Wootton, John..... | Nail, horse-shoe, machine..... | Nov. 10, 1857..... | II. |
| 18655 | Wootton, John E..... | Gauges, steam-pressure..... | Nov. 17, 1857..... | VI. |
| 18796 | Wootton, John E..... | Locomotives, driving-box for..... | Dec. 1, 1857..... | VI. |
| 17531 | Worcester, Edward J..... | Wrench..... | June 9, 1857..... | II. |
| 17247 | Worden, Leonard J..... | Axles, hubs to, mode of securing..... | May 5, 1857..... | X. |
| 17951 | Worrall, Thomas D..... | Plane, joiners'..... | Aug. 4, 1857..... | XIV. |
| 937 | Worrall, Thomas D..... | Stoves..... | Aug. 25, 1857..... | Design. |
| 18312 | Worrall, Thomas D..... | Planes, joiners', method of attaching handles to..... | Sept. 29, 1857..... | XIV. |
| 17657 | Worrall, Thomas D., assignor to himself and Thomas F. Caldicott, assignors to Thomas F. Caldicott. | Plane, bench..... | June 23, 1857..... | XIV. |
| 16702 | Worthen, W. E..... | Lathings, metallic..... | Feb. 24, 1857..... | IX. |
| 16767 | Worthen, W. E..... | Roof, metallic..... | Mar. 3, 1857..... | IX. |
| 18830 | Worthington, William S..... | Salt-pans, construction of..... | Dec. 8, 1857..... | IV. |
| 17713 | Wray, Leonard..... | Cane-juice, defecating..... | June 30, 1857..... | IV. |
| | Wright, Maguire, & Read. (See Maguire, Read, & Wright, assignors.) | | | |
| | Wright, Abram, and George F. and George E. Burt. (See Burt & Wright.) | | | |
| 16701 | Wright, Benjamin..... | Separators, grain, method of hanging the selves in..... | Feb. 24, 1857..... | I. |
| 18116 | Wright, Eleus..... | Pipe-coupling..... | Sept. 1, 1857..... | II. |
| 16424 | Wright, G. F. S..... | Saws, circular, method of mounting and grinding..... | Jan. 13, 1857..... | XIV. |
| 18029 | Wright, George..... | Spinning, self-acting mules for..... | Aug. 18, 1857..... | III. |
| 18456 | Wright, John, assignor to Stow Manufacturing Company. | Metal, sheet, machine for bending..... | Jan. 20, 1857..... | II. |

Patentees of inventions and designs, 1857.

| No. | Name of patentee. | Invention or discovery. | Date. | Class. |
|-------|---|---|----------------------|---------|
| 1724C | Wright, L. M. | Wheels, turbine, method of operating the gate of... | May 5, 1857. | XL. |
| 18005 | Wright, Martin Luther | Teeth, porcelain, setting. | Aug. 11, 1857. | XX. |
| 17009 | Wright, William | Pumps, working, method of. | April 7, 1857. | XL. |
| 17651 | Wyberd, John. (See Carlton, Isaac, assignor.) | | | |
| 19003 | Wykes, J. W. | Photographs on glass, background for | June 23, 1857. | XVIII. |
| 15313 | Wykoop, Francis G. | Pumps | Dec. 29, 1857. | XL. |
| 18169 | Wythes, William W. | Measuring cloth, machines for. | Sept. 29, 1857. | VIII. |
| | Yale, Linus. | Lock, pad. | Sept. 8, 1857. | II. |
| 18221 | Yates, Jas. (See DeLary, Newcomb, jr., assignor.) | | | |
| | Yost, Christian. | Reaping-machines, raking-attachment for. | Sept. 15, 1857. | I. |
| 17347 | Young & Brother. (See Gibbs, S. W., assignor.) | | | |
| 19008 | Young, C. M. | Shingle-machine | May 19, 1857. | XIV. |
| | Young, Charles T., assignor to himself and Henry Crowther. | Bedstead, steam spring. | Dec. 29, 1857. | XVII. |
| 923 | Young, Elias. | Stoves, cooking. | Aug. 4, 1857. | Design. |
| 966 | Young, Elias, assignor to Chamberlain & Company. | Stoves, cooks'. | Dec. 1, 1857. | Design. |
| 18656 | Young, George, jr. | Husking of corn, machine for facilitating the | Nov. 17, 1857. | I. |
| 1c222 | Young, James E. | Shingles, method of manufacturing. | Sept. 15, 1857. | XIV. |
| | Young, James E., and George Darby. (See Darby & Young.) | | | |
| 19004 | Young, William A. | Pumps, rotary. | Dec. 29, 1857. | XL. |
| 17180 | Youry, H. D. | Washing-machines | April 28, 1857. | XVII. |
| 17545 | Zepf, J. Joseph, assignor to Joseph Zepfel and John B. Radley. | Carpet-bags | June 9, 1857. | XVI. |
| 18657 | Zimmerman, G. F. S., and A. Beattie. | Hemp-brakes | Nov. 17, 1857. | III. |
| 18697 | Zimmerman, William | Smut-machines | Mar. 24, 1857. | XIII. |
| 17853 | Zimmerman, William | Grain-separators | July 21, 1857. | XIII. |
| 18363 | Zimmerman, William | Wind-mill | Oct. 6, 1857. | XL. |
| | Zolner, Paul W., and Conrad Harris. } (See Harris | | | |
| | Zolner, Paul W., and Conrad Harris } & Zolner) | | | |

CLASSIFIED LIST OF PATENTS FOR INVENTIONS AND DISCOVERIES GRANTED DURING THE YEAR 1857.

CLASS I.—AGRICULTURE, including implements and operations.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|--------------------------------|-----------------|
| 18576 | Beans, machine for pulling | Justus Day | Murray, N. Y. | Nov. 10, 1857. |
| 16926 | Bee-hives | Albert Kelsey | Westport, Mo. | Mar. 31, 1857. |
| 18523 | Bee-hives | B. D. Sanders | Holiday's Cove, Va. | Oct. 27, 1857. |
| 18757 | Bee-hives | Henry M. McClellan | York, Pa. | Dec. 1, 1857. |
| 18815 | Bee-hives | Samuel Kelly | Washington, D. C. | Dec. 8, 1857. |
| 16474 | Bee-hives, feed-boxes of | Jeremiah D. Eggleston | Canaan, Conn. | Jan. 27, 1857. |
| 18649 | Butter-worker | Isaac L. Smith and Charles C. Colburn | Burlington, Vt. | Nov. 17, 1857. |
| 18497 | Butter-workers | Charles W. Gage | Homer, N. Y. | Nov. 16, 1857. |
| 18666 | Cane, sugat, machines for covering | E. Butler and George M. Peck | Pompey, N. Y. | Oct. 27, 1857. |
| 18702 | Cheese, curing and storing, shelving for | John Allison | Parish of St. Martin, La. | Nov. 24, 1857. |
| 18671 | Churn | J. H. Phillips | Colebrook, Ohio | Nov. 24, 1857. |
| 18936 | Churn | Lewis W. Beecher | Avon, N. Y. | Dec. 22, 1857. |
| 18937 | Churn-dashers | William H. Truesdell | Elgin, Ill. | Dec. 22, 1857. |
| 16717 | Churns | James Vandolah and Elias Carry | Dillsborough, Ind. | Dec. 13, 1857. |
| 17159 | Churns | Isaac N. Buck | Elgin, Ill. | Oct. 13, 1857. |
| 17444 | Churns | E. P. & J. A. Cowles | Oakfield, N. Y. | Mar. 3, 1857. |
| 17781 | Churns | H. N. Mackey | Morgantown, Va. | April 28, 1857. |
| 17790 | Churns | Henry C. Nicholson | Mount Washington, Ohio | June 2, 1857. |
| 18165 | Churns | Charles H. Dana | West Lebanon, N. H. | July 14, 1857. |
| 18384 | Churns | Silas Hewit | Seneca Falls, N. Y. | July 14, 1857. |
| 18737 | Churns | Daniel E. True | Lake Village, N. H. | Sept. 8, 1857. |
| 17439 | Churns, atmospheric | Moses Byard | Milan, Ind. | Oct. 13, 1857. |
| 18505 | Corn, ears of, from the stalks, machines for severing | Benjamin Beers | New Fairfield, Conn. | Dec. 8, 1857. |
| 17466 | Corn, ears of, hand implement for severing the butts and separating husks from | Robert McCutcheon | Towanda, Pa. | June 2, 1857. |
| 18386 | Corn-sheller | A. J. & J. A. French | Franklin, Vt. | Oct. 27, 1857. |
| 18381 | Corn-sheller | Isaac N. Whitaker | Pecatonica, Ill. | June 2, 1857. |
| | | A. M. Cook | Millford, Mass. | Oct. 6, 1857. |
| | | Amel Stickney | Concord, N. H. | Oct. 6, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|----------------------------------|-----------------|
| 18139 | Corn-shellers | Andrew Dillman | Plainfield, Ill. | Sept. 8, 1857. |
| 18298 | Corn-shellers | J. J. Parker | Marietta, Ohio..... | Sept. 29, 1857. |
| 18700 | Corn-shellers | John W. Morton | Brunswick, Ohio..... | Nov. 24, 1857. |
| 18342 | Corn, shucking and shelling, machine for | Sanford Kingberry | Carrollton, Ga. | Oct. 6, 1857. |
| 18905 | Corn-stalks, machine for cutting and grinding. | W. G. Huyett | Williamsburg, Pa. | Dec. 22, 1857. |
| 18076 | Corn-stubble, &c., machines for cutting, on ground preparatory to ploughing. | John Augespurger..... | Trenton, Ohio | Sept. 1, 1857. |
| 16401 | Cultivator, cotton | Joseph Shaw | Richland, Ga. | Jan. 13, 1857. |
| 17091 | Cultivator, cotton | John M. Hall | Warrenton, Ga. | April 21, 1857. |
| 16364 | Cultivator-teeth | James P. Cramer, assignor to Hiram Cramer, assignor to James P. Cramer. | Schuylerville, N. Y. | Jan. 6, 1857. |
| 17925 | Cultivator-teeth | F. R. Forsyth | Cape Vincent, N. Y. | Aug. 4, 1857. |
| 18174 | Cultivator-teeth | Edmund L. Freeman, assignor to himself and J. & G. Lord & Co. | Brownsville, N. Y. | Sept. 8, 1857. |
| 18471 | Cultivator-teeth | Samuel Remington | Utica, N. Y. | Oct. 20, 1857. |
| 17891 | Cultivators | Henry Schreiner, jr., assignor to H. Schreiner, jr., and George Lark, assignors to Henry Schreiner, jr. | Ilion, N. Y. | July 14, 1857. |
| 17797 | Cultivators | Howard Mann | Perryburg, Pa. | July 14, 1857. |
| 17909 | Cultivators | Harrison, Ogborn, and George Taylor, assignors to Harrison Ogborn. | San Francisco, Cal. | July 28, 1857. |
| 18073 | Cultivators | Charles H. Sayre, assignor to himself and Samuel Remington. | Greensfork, Wayne co., Ind. | Aug. 26, 1857. |
| 18230 | Cultivators | William J. Forthec | Utica, N. Y. | Aug. 26, 1857. |
| 18520 | Cultivators | Thomas A. Robertson | Indianapolis, Ind. | Oct. 6, 1857. |
| 18530 | Cultivators | Nicholas Whitehall, assignor to N. & A. L. Whitehall. | Friendship, Md. | Oct. 27, 1857. |
| 18587 | Cultivators | David E. Hall | Rob Roy, Ind. | Oct. 27, 1857. |
| 18714 | Cultivators | Joseph Summers | Abingdon, Ill. | Nov. 10, 1857. |
| 18785 | Cultivators | A. Charles Withers | Raleigh, Va. | Nov. 24, 1857. |
| 18739 | Cultivators | Joshua Gibbs | Redbanks, Miss. | Dec. 1, 1857. |
| | | | Newark, Ohio | Dec. 1, 1857. |

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|---|---|-------------------------------------|------------------------|-----------------|
| 18840 | Cultivators | David P. Daggett. | Palmyra, N. Y. | Dec. 15, 1857. |
| 18890 | Cultivators | A. W. Hawley | Milan, Ohio | Dec. 22, 1857. |
| 18928 | Cultivators | John Richter | Clarksburg, Va. | Dec. 22, 1857. |
| 18938 | Cultivators | Lorin Wetherell | Worcester, Mass. | Dec. 22, 1857. |
| 18906 | Cultivators, corn | John B. Baker | Orondaga, N. Y. | Mar. 31, 1857. |
| 17391 | Cultivators, cotton | A. A. Roberts and B. Davis | La Grange, Ga. | May 26, 1857. |
| 18443 | Cultivators, cotton | D. P. Forney | Jacksonville, Ala. | Oct. 20, 1857. |
| 18478 | Cultivators, cotton | R. A. Vick | Byhalia, Miss. | Oct. 20, 1857. |
| 17849 | Cultivators, cotton and cane | Thomas E. Shannon | Woodville, Miss. | July 21, 1857. |
| 18317 | Drills, grain | Henry Beitzell | Centerville, Ind. | Oct. 6, 1857. |
| 18590 | Drills, grain | Joseph Ingels | Bentonville, Ind. | Nov. 10, 1857. |
| 16640 | Drills, seed | Oliver C. Green | Wooster, Ill. | Feb. 3, 1857. |
| 17144 | Drills, seed | E. Emmert | Franklin Grove, Ill. | Nov. 24, 1857. |
| 18890 | Drills, seed | Philip M. Gundlach | Bellville, Ill. | Nov. 24, 1857. |
| 18686 | Drills, seed, measuring apparatus of | Oliver C. Green | Dublin, Ind. | Nov. 24, 1857. |
| 18653 | Drills, self-feeding | William Wakeley | Homer, N. Y. | Nov. 17, 1857. |
| 16476 | Fallowing land, machines for | Richard J. Gailing | Indianapolis, Ind. | Jan. 27, 1857. |
| 16547 | Fan-blower | Chester P. Marshall | Fitchburg, Mass. | Feb. 3, 1857. |
| Fertilizers, processes for preparing. (See Class IV, letter P.) | | | | |
| Fertilizing compound. (See Class IV, letter C.) | | | | |
| 18804 | Forks, agricultural | Charles, Abram, and Charles N. Clow | Port Byron, N. Y. | Dec. 8, 1857. |
| 16396 | Forks, hay | William Jones | Speedsville, N. Y. | Jan. 13, 1857. |
| 18047 | Forks, hay and manure | William Jones | Speedsville, N. Y. | Aug. 25, 1857. |
| 18670 | Forks, hay and manure | G. L. Barton and A. E. Roberts | Albany, N. Y. | Nov. 24, 1857. |
| 18593 | Fruit-gatherers | William Doty | South Hartford, N. Y. | Oct. 27, 1857. |
| 18592 | Fruit-gatherers | Firman Goodwin | Astoria, N. Y. | Nov. 10, 1857. |
| 17407 | Furrows in land, water, machines for dressing | Jesse Whitehead | Manchester, Va. | June 2, 1857. |
| 17135 | Grain, binding, apparatus for | J. F. Barrett | North Granville, N. Y. | April 28, 1857. |
| 18231 | Grain, binding, machines for | Joseph F. Black | Lancaster, Ill. | Sept. 22, 1857. |
| 18986 | Grain, binding, machines for | L. D. Phillips | Chicago, Ill. | Dec. 29, 1857. |
| 16815 | Grain-cradles | Samuel D. Warren | Lebanon, Ala. | Mar. 10, 1857. |
| 18464 | Grain-cradles | Daniel Mifflin | King George C. H., Va. | Oct. 20, 1857. |
| 17223 | Grain, cutting and binding, machines for | Hiram Kellogg | McHenry, Ill. | May 6, 1857. |
| 16496 | Harrows | Daniel W. Shores | Hamden, Conn. | Jan. 17, 1857. |
| 16866 | Harrows | Sidney S. Hogle | York, Ohio | Mar. 17, 1857. |
| 16923 | Harrows | John E. Morgan | Deerfield, N. Y. | Mar. 31, 1857. |
| 17121 | Harrows | George W. Tulhurst | Cleveland, Ohio | April 21, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|----------------------------|---|---------------------------|-----------------|
| 17831 | Harrows, rotating..... | James B. Glascock | Fancy Brook, Ill..... | July 21, 1857. |
| 17151 | Harvester-frames | M. G. Hubbard | Penn Yan, N. Y. | April 28, 1857. |
| 16836 | Harvester-rake | Elias T. Ford | Batavia, N. Y. | Nov. 24, 1857. |
| 16441 | Harvesters | M. G. Hubbard | Penn Yan, N. Y. | Jan. 20, 1857. |
| 16445 | Harvesters | Pelle Manny | Waddam's Grove, Ill..... | Jan. 20, 1857. |
| 16484 | Harvesters | Moses G. Hubbard | Penn Yan, N. Y. | Jan. 27, 1857. |
| 16763 | Harvesters | David Watson | Newark, N. J. | Mar. 3, 1857. |
| 16781 | Harvesters | S. A. Clemens | Rockford, Ill. | Mar. 3, 1857. |
| 16739 | Harvesters | Lewis W. Harris | Waterville, N. Y. | Mar. 3, 1857. |
| 16798 | Harvesters | Hiram Clark | Rochester, N. Y. | Mar. 10, 1857. |
| 16840 | Harvesters | M. G. Hubbard | Penn Yan, N. Y. | Mar. 17, 1857. |
| 16836 | Harvesters | Cornelius Holloway, assignor to James D. Maney. | Petersburg, Va | Mar. 17, 1857. |
| 16957 | Harvesters | Samuel S. Allen..... | Bristol, Pa | April 7, 1857. |
| 16335 | Harvesters | P. Manny..... | Waddam's Grove, Ill..... | April 7, 1857. |
| 16984 | Harvesters | Pelle Manny | Waddam's Grove, Ill..... | April 7, 1857. |
| 17123 | Harvesters | J. C. & T. G. Wilson..... | Cedar Hill, Texas..... | April 21, 1857. |
| 17157 | Harvesters | Isaiah Knauer | Valley Forge, Pa..... | April 28, 1857. |
| 17277 | Harvesters. (No. 3.)..... | M. G. Hubbard | Penn Yan, N. Y. | May 12, 1857. |
| 17280 | Harvesters. (No. 2.)..... | M. G. Hubbard | Penn Yan, N. Y. | May 12, 1857. |
| 17451 | Harvesters | W. T. B. Read | Alton, Ill..... | May 12, 1857. |
| 17556 | Harvesters | Nicholas Clute | Dunnaville, N. Y. | June 2, 1857. |
| 17676 | Harvesters | Henry D. Hammond..... | Batavia, N. Y. | June 16, 1857. |
| 17691 | Harvesters | David S. McNamara..... | Batavia, N. Y. | June 30, 1857. |
| 17705 | Harvesters | Charles T. Stetson..... | North Hook, N. Y. | June 30, 1857. |
| 17773 | Harvesters | John P. Manny | Amherst, Mass..... | June 30, 1857. |
| 17942 | Harvesters | N. C. Sherman and S. Lightcap | Rockford, Ill..... | July 14, 1857. |
| 17945 | Harvesters | Charles Tucker and J. A. Sprague | Haile Green, Wis..... | Aug. 4, 1857. |
| 17927 | Harvesters | Samuel Gumaer | Mantua, Ohio..... | Aug. 4, 1857. |
| 18173 | Harvesters | C. M. Lufkin, assignor to Norris Lufkin. | Chicago, Ill..... | Aug. 4, 1857. |
| 18307 | Harvesters | Samuel Pennock, assignor to himself and M. Pennock. | Acworth, N. H..... | Sept. 8, 1857. |
| | | | Kennett's Square, Pa..... | Sept. 22, 1857. |

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| 18240 | Harvesters | Andrew B. J. Flowers | Greensfield, Ind | Sept. 22, 1857. |
| 18300 | Harvesters | Reuben Daniels | Woodstock, Vt. | Oct. 13, 1857. |
| 18105 | Harvesters | N. A. Patterson | Kington, Tenn | Oct. 13, 1857. |
| 18562 | Harvesters | Hosea Willard and Robert Ross | Vergennes, Vt. | Nov. 3, 1857. |
| 18613 | Harvesters | S. Johnson and L. Johnson, Jr. | Avon, N. Y. | Dec. 8, 1857. |
| 18038 | Harvesters | William Webber, Jr., and John Webber | Rockton, Ill. | Dec. 22, 1857. |
| 19001 | Harvesters. (No. 1.) | Walter A. Wood | Hookack Falls, N. Y. | Dec. 29, 1857. |
| 19002 | Harvesters. (No. 2.) | Walter A. Wood | Hookack Falls, N. Y. | Dec. 29, 1857. |
| 18981 | Harvesters | John Long | Massillon, Ohio | Dec. 30, 1857. |
| 17687 | Harvesters, automatic rake for | Joseph S. Manning | Philadelphia, Pa. | June 30, 1857. |
| 18070 | Harvesters, automatic rakes for | John W. Brokaw, assignor to Warder, Brokaw, & Child | Springfield, Ohio | Aug. 25, 1857. |
| 18697 | Harvesters, bean | Joshua Keicham and John Waterman | Orangeport, N. Y. | Nov. 24, 1857. |
| 16921 | Harvesters, corn | Abram Heulings | Philadelphia, Pa. | Mar. 31, 1857. |
| 17729 | Harvesters, corn | Israel Dodenhoff | Bloomington, Ill. | July 7, 1857. |
| 17832 | Harvesters, corn | G. D. Haworth | Mechanicburg, Ill. | July 21, 1857. |
| 18747 | Harvesters, corn | Adam Humberger | Somerset, Ohio | Dec. 1, 1857. |
| 18769 | Harvesters, corn | John H. Rible | Somerset, Ohio | Dec. 1, 1857. |
| 16142 | Harvesters, cutters for | M. G. Hubbard | Penn Yan, N. Y. | Jan. 20, 1857. |
| 16968 | Harvesters, cutting apparatus for | Samuel Comfort, Jr. | Morrisville, Pa. | April 7, 1857. |
| 17745 | Harvesters, cutting apparatus for | John P. Manny | Rockford, Ill. | July 7, 1857. |
| 17739 | Harvesters, cutting apparatus for | Joseph Irwin | Frankford, Ohio | July 7, 1857. |
| 18659 | Harvesters, cutting apparatus for | James L. Fountain, assignor to himself, L. J. Clark, B. McKenney, and C. M. Fountain | Rockford, Ill. | Nov. 17, 1857. |
| 17575 | Harvesters, cutting apparatus of | M. G. Hubbard | Penn Yan, N. Y. | June 16, 1857. |
| 18052 | Harvesters, cutting apparatus of | Pelle Manny | Wadams' Grove, Ill. | Aug. 25, 1857. |
| 18754 | Harvesters, finger-bars for | J. M. Long, Peter Black, and Robert Allstatter | Hamilton, Ohio | Dec. 1, 1857. |
| 17328 | Harvesters, grain and grass | John H. Heyser and Edward M. Mobley | Hagerstown, Md. | May 19, 1857. |
| 18229 | Harvesters, grain and grass, cutting-apparatus for | John W. Baltzly and William Hobson | Paria, Ill. | Sept. 22, 1857. |
| 17804 | Harvesters, guard-fingers for | Adam E. Reese | Phillipsburg, N. Y. | July 28, 1857. |
| 18871 | Harvesters, mode of supporting reeds for | Thomas T. Stealy | Middlebourne, Va. | Dec. 16, 1857. |
| 18735 | Harvesters, rake for | C. P. Granberg | Geneva, Ill. | Dec. 1, 1857. |
| 18256 | Harvesters, rakes for | Isaac Van Duren | Somerville, N. J. | Sept. 22, 1857. |
| 18437 | Harvesters, rakes for | Samuel Comfort, Jr. | Morrisville, Pa. | Oct. 20, 1857. |
| 18941 | Harvesters, raking apparatus for | Jesse Urmy | Wilmington, Del. | Mar. 31, 1857. |
| 17703 | Harvesters, raking apparatus for | Daniel C. Smith | Tecumseh, Mich. | June 30, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|------------------------------------|----------------------------|-----------------|
| 17798 | Harvesters, raking-apparatus for..... | John P. Manny..... | Rockford, Ill..... | July 14, 1857. |
| 17909 | Harvesters, raking-apparatus for..... | Isaac Dudenhoff..... | Bloomington, Ill..... | Aug. 18, 1857. |
| 17925 | Harvesters, raking-attachment for..... | Isaac H. Conklin..... | Rockford, Ill..... | April 14, 1857. |
| 17945 | Harvesters, raking-attachment for..... | D. W. and H. A. Lafetra..... | Eatonstown, N. J..... | April 14, 1857. |
| 17950 | Harvesters, raking-attachment for..... | John McIntosh..... | Geneva, Ill..... | June 30, 1857. |
| 18096 | Harvesters, raking-device for..... | Stephen R. Hunter..... | Cortlandt, N. Y..... | Sept. 1, 1857. |
| 17749 | Harvesters, scoll-wheel for..... | Charles E. Rogers..... | Utica, N. Y..... | July 7, 1857. |
| 17955 | Harvesters, self-acting rakes for..... | Salom T. Laub..... | New Washington, Ind..... | June 30, 1857. |
| 18482 | Harvesters, swathing-apparatus for..... | Samuel C. Longshore..... | Lakaka, Pa..... | Oct. 20, 1857. |
| 18769 | Harvesting grain, machine for..... | George R. Crane..... | Caldwell, N. J..... | Mar. 10, 1857. |
| 18658 | Harvesting grain and grass, machines for..... | William and Thomas Schnebly..... | Hackensack, N. J..... | Feb. 17, 1857. |
| 17438 | Harvesting hemp, machines for..... | J. B. McCormick..... | Versailles, Ky..... | June 2, 1857. |
| 18628 | Harvesting-machines..... | John C. Cox and Reuben Newton..... | Greenville, N. C..... | Nov. 17, 1857. |
| 16618 | Harvesting-machines, (A)..... | Walter A. Wood..... | Hoosick Falls, N. Y..... | Feb. 10, 1857. |
| 16619 | Harvesting-machines, (B)..... | Walter A. Wood..... | Hoosick Falls, N. Y..... | Feb. 10, 1857. |
| 16620 | Harvesting-machines, (C)..... | Walter A. Wood..... | Hoosick Falls, N. Y..... | Feb. 10, 1857. |
| 16873 | Harvesting-machines..... | George Eaterly..... | Heart Prairie, Wis..... | Mar. 24, 1857. |
| 17134 | Harvesting-machines..... | J. F. Barrett..... | North Granville, N. Y..... | April 28, 1857. |
| 17678 | Harvesting-machines..... | John K. Harris..... | Allensville, Ind..... | June 30, 1857. |
| 17088 | Harvesting-machines, automatic rakes for..... | J. P. Green and J. Dudenhoff..... | Bloomington, Ill..... | April 21, 1857. |
| 16393 | Harvesting-machines, cutting-apparatus for..... | Robert J. Morrison..... | Richmond, Va..... | Jan. 13, 1857. |
| 18093 | Harvesting-machines, method of operating the cutters of..... | James Haviland..... | Milton, N. Y..... | Sept. 1, 1857. |
| 17367 | Harvesting-machines, tongue and castor-plate for..... | Ralph Emerson, jr..... | Rockford, Ill..... | May 26, 1857. |
| 16726 | Harvesting standing corn, machines for..... | James H. Frampton..... | Hopewell, Ohio..... | Mar. 3, 1857. |
| 18463 | Hedges, trimming, machines for..... | Samuel Bradbury..... | Griggsville, Ill..... | Jan. 27, 1857. |
| 17764 | Hedges, trimming, machines for..... | William Winmer..... | Billingville, Ind..... | July 7, 1857. |
| 18979 | Hoes..... | Horace A. Lothrop..... | Sharon, Mass..... | Dec. 29, 1857. |
| 17948 | Hoes, garden..... | Solomon Shetter..... | Allegheny, Pa..... | July 21, 1857. |
| 16764 | Hulling and scouring wheat, &c, machines for..... | Joseph Weber..... | Brayville, Ind..... | Mar. 3, 1857. |

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|-------|--|---|-----------------------------|----------------|
| 16509 | Hulling and separating cotton-seed, machine for. | William Wilber..... | New York, N. Y..... | Jan. 27, 1857. |
| 17961 | Hulling cotton-seed, machines for..... | William R. Fee..... | Cincinnati, Ohio..... | Aug. 11, 1857. |
| 16469 | Hullin g rice. (See Class XIII, letter R.) | Lewis F. Currier..... | Portland, Me..... | Jan. 27, 1857. |
| 18332 | Huaker, corn..... | Harlan P. Gerriah..... | Sandoval, Ill..... | Oct. 6, 1857. |
| 18358 | Huaker, corn..... | W. H. Smith..... | Newport, R. I..... | Oct. 6, 1857. |
| 18447 | Huaker, corn..... | Alden Graham..... | Roxbury, Mass..... | Oct. 20, 1857. |
| 18571 | Huaker, corn..... | Joseph Cawthra..... | Rochester, N. Y..... | Nov. 10, 1857. |
| 18584 | Huaker, corn..... | Samuel A. Gould..... | Seneca Falls, N. Y..... | Nov. 10, 1857. |
| 18658 | Huaker, corn..... | Herman A. Doster, assignor to himself and Smith A. Skinner. | Bethlehem, Pa..... | Nov. 17, 1857. |
| 18692 | Huaker, corn..... | Smith A. Skinner, assignor to himself and Herman A. Doster. | Lawrence, Mass..... | Nov. 17, 1857. |
| 18644 | Huaker, corn..... | Charles N. Lewis..... | Seneca Falls, N. Y..... | Nov. 17, 1857. |
| 17269 | Huakers, corn..... | E. F. French..... | Franklin, Vt..... | May 12, 1857. |
| 18331 | Huakers, corn..... | A. M. George..... | Nashua, N. H..... | Oct. 6, 1857. |
| 18396 | Huakers, corn..... | John B. Heich..... | Cincinnati, Ohio..... | Oct. 13, 1857. |
| 18385 | Huakers, corn..... | Robert Bryson..... | Schenectady, N. Y..... | Oct. 13, 1857. |
| 18433 | Huakers, corn..... | George K. Brown..... | Moultonborough, N. H..... | Oct. 20, 1857. |
| 18922 | Huakers, corn..... | David M. Mefford..... | Perrysburg, Ohio..... | Dec. 22, 1857. |
| 16737 | Husking corn..... | William Lewis..... | Seneca Falls, N. Y..... | Mar. 3, 1857. |
| 18625 | Husking corn, device for..... | David Bedell..... | Seneca Falls, N. Y..... | Nov. 17, 1857. |
| 16633 | Husking corn, machines for..... | Ezra S. Holmes..... | Seneca Falls, N. Y..... | Nov. 17, 1857. |
| 16768 | Husking corn, machines for..... | Hiram Strat..... | Lockport, N. Y..... | Feb. 10, 1857. |
| 16740 | Husking corn, machines for..... | John Massey..... | Covington, Ky..... | Mar. 3, 1857. |
| 16924 | Husking corn, machines for..... | Abraham R. Hurst..... | Buffalo, N. Y..... | Mar. 3, 1857. |
| 17731 | Husking corn, machines for..... | William Emery, jr..... | New Cumberland, Pa..... | Mar. 31, 1857. |
| 17720 | Husking corn, machines for..... | George W. Bachman..... | Chester, Ill..... | July 7, 1857. |
| 18473 | Husking corn, machines for..... | Martin W. Stevens and Edward G. Kinsley. | Clifton Springs, N. Y..... | July 7, 1857. |
| 18656 | Husking of corn, machine for facilitating the..... | George Young, jr..... | Stoughton, Mass..... | Oct. 20, 1857. |
| 18607 | Husking-palm..... | David E. Shaw..... | Saratoga Springs, N. Y..... | Nov. 17, 1857. |
| 18774 | Lime and other fertilizers, machine for spreading. | Pierpont Seymour..... | South Salem, Ohio..... | Nov. 10, 1857. |
| 17693 | Mowers and reapers, combined frame for..... | J. A. Moore and A. H. Patch..... | East Bloomfield, N. Y..... | Dec. 1, 1857. |
| 17257 | Mowing and reaping machines..... | Amory Amsden..... | Louisville, Ky..... | June 30, 1857. |
| 16855 | Mowi g-machines..... | John Taggart..... | Rochester, N. Y..... | May 26, 1857. |
| | | | Roxbury, Mass..... | Mar. 17, 1857. |

I.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|------------------------------|-----------------|
| 17355 | Mowing-machines..... | Thomas Harding, assignor to Warder, Brokaw, & Child. | Springfield, Ohio | May 19, 1857. |
| 17417 | Mowing-machines..... | Silas P. Briggs..... | Saratoga Springs, N. Y..... | June 2, 1857. |
| 17597 | Mowing-machines..... | Jeremy B. Wardwell..... | Methuen, Mass..... | June 16, 1857. |
| 17964 | Mowing-machines..... | Alanson Gale..... | Poughkeepsie, N. Y..... | Aug. 11, 1857. |
| 17956 | Mowing-machines..... | William Bacheller..... | West Newberry, Mass..... | Aug. 11, 1857. |
| 18141 | Mowing-machines..... | George C. Dolph..... | West Andover, Ohio..... | Sept. 8, 1857. |
| 18157 | Mowing-machines..... | A. H. Caryl..... | Sandusky, Ohio..... | Sept. 15, 1857. |
| 18510 | Mowing-machines..... | John P. Manny..... | Rockford, Ill..... | Oct. 27, 1857. |
| 18788 | Mowing machines..... | E. Ball, assignor to himself and John Butler. | Canton, Ohio..... | Dec. 1, 1857. |
| 18975 | Mowing-machines..... | Silas E. and Morgan P. Jackson..... | Booneville, N. Y..... | Dec. 29, 1857. |
| 18976 | Mowing-machines..... | Silas E. and Morgan P. Jackson..... | Booneville, N. Y..... | Dec. 29, 1857. |
| 18980 | Mowing-machines, cutting-apparatus of..... | Chester Bullock..... | Jamestown, N. Y..... | Dec. 8, 1857. |
| 18983 | Mowing-machines, track-clearers for..... | Abraham Marcellas..... | Amsterdam, N. Y..... | Dec. 29, 1857. |
| 18363 | Picking cotton in the field, machines for..... | Joseph W. Thorn..... | Courtland, Ala..... | Oct. 6, 1857. |
| 17362 | Planter, hand seed..... | Silas P. Briggs..... | Saratoga Springs, N. Y..... | May 26, 1857. |
| 18756 | Planters, cane..... | Tobias Marcus..... | New York, N. Y..... | Dec. 1, 1857. |
| 16410 | Planters, corn..... | John S. Toad..... | Venice, N. Y..... | Jan. 13, 1857. |
| 17380 | Planters, corn..... | Samuel M. Perkins..... | Fort Hill, Ill..... | Feb. 3, 1857. |
| 16811 | Planters, corn..... | Martin Robbins..... | Cincinnati, Ohio..... | Feb. 10, 1857. |
| 16930 | Planters, corn..... | John Miller..... | Bucyrus, Ohio..... | Mar. 31, 1857. |
| 17258 | Planters, corn..... | John Broughton..... | New York, N. Y..... | May 12, 1857. |
| 17397 | Planters, corn..... | F. J. Smith..... | Four Corners, Ohio..... | May 26, 1857. |
| 17380 | Planters, corn..... | Robert Kuehke and P. Merkel..... | St. Louis, Mo..... | May 26, 1857. |
| 17592 | Planters, corn..... | William T. Pepper..... | Rising Sun, Ind..... | June 16, 1857. |
| 17584 | Planters, corn..... | Sylvanus Richardson..... | Jericho, Vt..... | June 16, 1857. |
| 17566 | Planters, corn..... | Ives W. McGaffey..... | Buffalo, N. Y..... | June 16, 1857. |
| 17786 | Planters, corn..... | Alvin Franklin..... | Genoa Cross Roads, Ohio..... | July 14, 1857. |
| 17841 | Planters, corn..... | Norman A. Lewis..... | Glenn's Falls, N. Y..... | July 21, 1857. |
| 17898 | Planters, corn..... | Charles Schnepf..... | Lancaster, Pa..... | July 28, 1857. |
| 18140 | Planters, corn..... | D. W. Hughes..... | New London, Mo..... | Sept. 8, 1857. |

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|-------|----------------------------|---|----------------------------|-----------------------------------|
| 18197 | Planters, corn..... | D. R. Alden..... | Unionville, Ohio..... | Sept. 8, 1857. |
| 18198 | Planters, corn..... | Horace R. Allen..... | Athens, Ohio..... | Sept. 8, 1857. |
| 18508 | Planters, corn..... | Hanford Ingraham..... | Naples, N. Y..... | Oct. 27, 1857. |
| 18708 | Planters, corn..... | Bradley L. Prime..... | Hamilton, Ohio..... | Dec. 1, 1857. |
| 18708 | Planters, corn..... | J. H. Bonham..... | Elizabethtown, Ohio..... | Dec. 8, 1857. |
| 18846 | Planters, corn..... | J. J. S. Hasler..... | Ripley, Va..... | Dec. 15, 1857. |
| 18368 | Planters, cotton-seed..... | William Badger..... | Memphis, Tenn..... | Jan. 13, 1857. |
| 18550 | Planters, cotton-seed..... | James F. Orr..... | Orrville, Ala..... | Feb. 3, 1857. |
| 17221 | Planters, cotton-seed..... | H. L. Justice and John H. Galbreath..... | Goodlettsville, Tenn..... | May 5, 1857. |
| 18109 | Planters, cotton-seed..... | Thomas J. Rogers..... | Caseville, Ga..... | Sept. 1, 1857. |
| 18482 | Planters, cotton-seed..... | T. W. White..... | Milledgeville, Ga..... | Oct. 20, 1857. |
| 18913 | Planters, cotton-seed..... | Lorenzo D. Law..... | Henderson, Ga..... | Dec. 23, 1857. |
| 16677 | Planters, hand seed..... | John H. Bruen..... | Penn Yan, N. Y..... | Feb. 24, 1857. |
| 17080 | Planters, hand seed..... | Plymon B. Green..... | Chicago, Ill..... | April 21, 1857. |
| 17081 | Planters, hand seed..... | John Decker..... | Sparta, N. J..... | April 21, 1857. |
| 17080 | Planters, hand seed..... | Thomas Crane..... | Fort Atkinson, Wis..... | April 21, 1857. |
| 18145 | Planters, hand seed..... | Joel Haines..... | West Middleburg, Ohio..... | Sept. 8, 1857. |
| 18827 | Planters, potato..... | Stephen H. Strong..... | Brunswick, Ohio..... | Dec. 8, 1857. |
| 16409 | Planters, seed..... | Joseph Thompson..... | Durhamville, N. Y..... | Jan. 13, 1857. |
| 16522 | Planters, seed..... | Levi Beemer..... | Libertyville, N. J..... | Feb. 3, 1857. |
| 16500 | Planters, seed..... | John Hildebrand..... | East Berlin, Pa..... | Feb. 10, 1857. |
| 16617 | Planters, seed..... | H. Thomason..... | Lafayette, Ind..... | Feb. 10, 1857. |
| 16585 | Planters, seed..... | Thomas B. Houghton..... | Bloomington, Ill..... | Feb. 10, 1857. |
| 16610 | Planters, seed..... | Silas G. Randall..... | Rockford, Ill..... | Feb. 10, 1857. |
| 16597 | Planters, seed..... | Jacob Landes..... | Selma, Ohio..... | Feb. 10, 1857. |
| 16592 | Planters, seed..... | Reinhold Boeklen..... | Jersey City, N. J..... | Feb. 10, 1857. |
| 16636 | Planters, seed..... | Leonard Arnold..... | Janesville, Wis..... | Feb. 17, 1857. |
| 16729 | Planters, seed..... | Firman Goodwin..... | Astoria, N. Y..... | Mar. 3, 1857. |
| 16929 | Planters, seed..... | George A. Meacham..... | New York, N. Y..... | Mar. 31, 1857. |
| 17145 | Planters, seed..... | George M. Evans..... | Pittsburg, Pa..... | April 28, 1857. |
| 17305 | Planters, seed..... | Charles Ketcham, assignor to Charles G. Judd..... | Penn Yan, N. Y..... | May 12, 1857. |
| 17275 | Planters, seed..... | John Hazelton..... | Oxford, N. H..... | May 12, 1857. |
| 17260 | Planters, seed..... | John H. Bruen..... | Penn Yan, N. Y..... | May 12, 1857. |
| 17402 | Planters, seed..... | Jesse Whitehead..... | Manchester, Va..... | May 20, 1857. |
| 17450 | Planters, seed..... | Silas G. Randall..... | Dixon, Ill..... | June 2, 1857. |
| 17568 | Planters, seed..... | S. T. Holly..... | Rockford, Ill..... | June 16; released Sept. 22, 1857. |
| 18126 | Planters, seed..... | Cyrus C. Aldrich..... | Faribault, Min..... | Sept. 8, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--------------------------------|--|----------------------------|-----------------|
| 18140 | Planters, seed..... | J. W. Ella and James Charlton..... | Pittsburg, Pa..... | Sept. 8, 1857. |
| 18334 | Planters, seed..... | A. M. Gould and A. Flanders..... | Cambria, N. Y..... | Oct. 6, 1857. |
| 18344 | Planters, seed..... | C. O. Luce..... | Brandon, Vt..... | Oct. 6, 1857. |
| 18366 | Planters, seed..... | Hosea Willard..... | Vergennes, Vt..... | Oct. 6, 1857. |
| 18383 | Planters, seed..... | W. Y. Gill..... | Henderson, Ky..... | Oct. 6, 1857. |
| 18393 | Planters, seed..... | Joseph Hall..... | Honey Cut, Ala..... | Oct. 13, 1857. |
| 18450 | Planters, seed..... | P. Hinkley..... | Charleston, Ill..... | Oct. 20, 1857. |
| 18525 | Planters, seed..... | J. D. Smith..... | Lancaster, Ohio..... | Oct. 27, 1857. |
| 18716 | Planters, seed..... | L. F. Ward..... | Marathon, N. Y..... | Nov. 24, 1857. |
| 18717 | Planters, seed..... | Caleb B. Winder..... | North Lewisburg, Ohio..... | Nov. 24, 1857. |
| 18772 | Planters, seed..... | John Robinson, of Ell..... | Sharpsburg, Md..... | Dec. 1, 1857. |
| 18762 | Planters, seed..... | Daniel B. Neal..... | Mount Gilead, Ohio..... | Dec. 1, 1857. |
| 18821 | Planters, seed..... | Joel Lee..... | Galesburg, Ill..... | Dec. 8, 1857. |
| 18802 | Planters, seed..... | James Carroll..... | Laporte, Ohio..... | Dec. 8, 1857. |
| 18909 | Planters, seed..... | L. F. Ward..... | Marathon, N. Y..... | Dec. 29, 1857. |
| 18843 | Planters, seed, tubes for..... | Joseph C. Haines..... | Dublin, Ind..... | Dec. 15, 1857. |
| 17462 | Plough-clevis..... | J. D. Willoughby..... | Pleasant Hall, Pa..... | Dec. 2, 1857. |
| 17594 | Plough, cultivator..... | Micajah Tolle..... | Newport, Ky..... | June 16, 1857. |
| 18596 | Ploughing-machines..... | Henry Mosser..... | Pittsburg, Pa..... | Nov. 10, 1857. |
| 16901 | Ploughs..... | Elliott Andrus..... | Geneva, N. Y..... | Mar. 31, 1857. |
| 17211 | Ploughs..... | Thomas C. Garlington..... | La Fayette, Ala..... | May 5, 1857. |
| 17476 | Ploughs..... | John Ormiston, assignor to D. N. Allard..... | Centre Township, Ohio..... | June 2, 1857. |
| 17430 | Ploughs..... | John S. Hall..... | West Manchester, Pa..... | June 2, 1857. |
| 17577 | Ploughs..... | Charles B. Ingereoll..... | Morris, Ill..... | June 16, 1857. |
| 17579 | Ploughs..... | L. W. and E. D. Legg..... | Speedsville, N. Y..... | June 16, 1857. |
| 18336 | Ploughs..... | Manasseh Grover..... | Clyde, Ohio..... | Oct. 6, 1857. |
| 18355 | Ploughs..... | Thomas Sharp..... | Nashville, Tenn..... | Oct. 6, 1857. |
| 18463 | Ploughs..... | C. B. Magruder..... | Thomasville, Ga..... | Oct. 20, 1857. |
| 18476 | Ploughs..... | David K. Thom..... | Marshall county, Tenn..... | Oct. 20, 1857. |
| 18480 | Ploughs..... | Noah Warlick..... | Lafayette, Ala..... | Oct. 20, 1857. |
| 18459 | Ploughs..... | John S. Lash..... | Carlisle, Pa..... | Oct. 20, 1857. |
| 18609 | Ploughs..... | Horatio Stanly..... | Greene, Pa..... | Nov. 10, 1857. |

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| 18693 | Ploughs..... | James G. Cummings..... | Columbus, Miss..... | Nov. 24, 1857. |
| 18776 | Ploughs..... | Wm. W. Skinner..... | Davenport, Iowa..... | Dec. 1, 1857. |
| 18760 | Ploughs..... | John Lane, Jr..... | Lockport, Ill..... | Dec. 1, 1857. |
| 18726 | Ploughs..... | Joseph Banks..... | Dadeville, Ala..... | Dec. 1, 1857. |
| 18783 | Ploughs..... | Robert B. Winston..... | Richmond, Va..... | Dec. 1, 1857. |
| 18820 | Ploughs..... | Joel Lee..... | Galesburg, Ill..... | Dec. 8, 1857. |
| 18803 | Ploughs..... | Jarvis Case..... | Springfield, Ill..... | Dec. 8, 1857. |
| 18835 | Ploughs..... | R. S. Stenton..... | New York, N. Y..... | Dec. 8, 1857. |
| 17212 | Ploughs, construction of..... | Jackson Gorham..... | Baldstown, Ga..... | May 5, 1857. |
| 17777 | Ploughs, cultivator..... | George G. Black..... | Crossinville, Ohio..... | July 14, 1857. |
| 18600 | Ploughs, digging..... | Esra Peck..... | Deer Park, N. Y..... | Nov. 10, 1857. |
| 16912 | Ploughs, gang..... | Jesse Frye..... | Springfield, Ill..... | Mar. 31, 1857. |
| 17591 | Ploughs, gang..... | Joseph Sutter..... | St. Louis, Mo..... | June 16, 1857. |
| 18543 | Ploughs, gang..... | Samuel L. Kingston and David Gore..... | Plainview, Ill..... | Oct. 6, 1857. |
| 18397 | Ploughs, gang..... | George W. Hildreth..... | Lockport, N. Y..... | Oct. 13, 1857. |
| 18698 | Ploughs, gang..... | Joel Lee..... | Galesburg, Ill..... | Nov. 24, 1857. |
| 18749 | Ploughs, gang..... | Edward C. Jones..... | Pittsburg, Pa..... | Dec. 1, 1857. |
| 18336 | Ploughs, hill-side..... | A. I. Hardin..... | Shelby, N. C..... | Oct. 6, 1857. |
| 16913 | Ploughs, prairie..... | Jesse Frye..... | Springfield, Ill..... | Mar. 31, 1857. |
| 17547 | Ploughs, reversible, mould-boards for..... | Henry S. Akins..... | Berkshire, N. Y..... | June 16, 1857. |
| 18894 | Ploughs, shovel..... | David Eberly..... | Waynesville, Ohio..... | Dec. 24, 1857. |
| 16937 | Ploughs, steam..... | David B. Spencer..... | Parkersburg, Va..... | Mar. 31, 1857. |
| 18446 | Ploughs, steam..... | John R. Gray..... | Fair Play, Wis..... | Oct. 20, 1857. |
| 18468 | Ploughs, steam..... | E. Graves Otis..... | Yonkers, N. Y..... | Oct. 20, 1857. |
| 18619 | Ploughs, sub-soil..... | John Wood and Reuben North..... | Rochester, Wis..... | Nov. 10, 1857. |
| 16722 | Potato-diggers..... | Paul Dennis..... | Stillwater, N. Y..... | Mar. 3, 1857. |
| 17129 | Potato-diggers..... | John Taggart, assignor to himself and William M. Messer..... | Roxbury, Mass..... | April 21, 1857. |
| 17428 | Potato-diggers..... | Isaac Griffin..... | Saratoga county, N. Y..... | June 2, 1857. |
| 18899 | Potato-diggers..... | Jacob E. Hardenbergh..... | Fultonville, N. Y..... | Dec. 22, 1857. |
| 18954 | Potato-digging..... | Isaac S. Bunnell..... | Montrose, Pa..... | Dec. 29, 1857. |
| 19009 | Potato-digging..... | Alexander Anderson..... | Marham, Canada..... | Dec. 29, 1857. |
| 17856 | Potatoes, machines for digging..... | Joseph Heulings, assignor to himself, W. H. Lawson, and B. M. Heulings..... | Philadelphia, Pa..... | July 21, 1857. |
| 17827 | Potatoes, planting, machines for..... | Galusha J. Bundy..... | Lyndon, Vt..... | July 21, 1857. |
| 18079 | Rakes..... | Andrew J. Blodgett..... | Newport, N. H..... | Sept. 1, 1857. |
| 18339 | Rakes..... | A. A. & A. Hotchkiss..... | Sharon Valley, Conn..... | Oct. 6, 1857. |
| 17772 | Rakes, hay..... | S. W. Wood, assignor to Lewis H. Parsons..... | Washington, D. C..... | July 7, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|-------------------------------|-----------------|
| 18731 | Rakes, hay | L. A. C. Brown | Sparta, Ill. | Dec. 1, 1857. |
| 18750 | Rakes, horse | Valentine Hyatt | Westfield, Ohio | Dec. 15, 1857. |
| 16342 | Reapers, raking-attachment for | James H. Thompson | Newark, N. J. | Jan. 6, 1857. |
| 16362 | Reapers, raking-attachment for | Peter Harnist | Marinetown, Ill. | Feb. 10, 1857. |
| 16413 | Reaping and mowing machines | David Watson | Newark, N. J. | Jan. 13, 1857. |
| 16599 | Reaping and mowing machines | Jeremiah W. Mulley | Amsterdam, N. Y. | Feb. 10, 1857. |
| 17205 | Reaping and mowing machines | Charles Crook | New Hope, Pa. | May 5, 1857. |
| 18238 | Reaping and mowing machines | John G. Dunham | Raritan, N. J. | Sept. 22, 1857. |
| 18249 | Reaping and mowing machines | Marcus E. Ellsworth | Hudson, Ohio | Oct. 6, 1857. |
| 18289 | Reaping and mowing machines | Henry G. Vanderwerken | Greenbush, N. Y. | Dec. 6, 1857. |
| 18333 | Reaping and mowing machines | J. W. Brokaw and Thomas Harding, assignors to Warder, Brokaw, & Child | Springfield, Ohio | Dec. 8, 1857. |
| 17990 | Reaping and mowing machines, finger-bar for | John T. Whitaker and Calvin D. Reed | St. Charles, Ill. | Aug. 11, 1857. |
| 18340 | Reaping and mowing machines, guard-finger for | Charles Howell | Cleveland, Ohio | Oct. 6, 1857. |
| 16971 | Reaping-machines | George Esterly | Heart Prairie, Wis. | April 7, 1857. |
| 16735 | Reaping-machines, rake for | Caleb Lee | Knox Township, Ohio | Mar. 3, 1857. |
| 18188 | Reaping-machines, raking attachment for | A. H. Cary | Sandusky, Ohio | Sept. 15, 1857. |
| 18221 | Reaping-machines, raking-attachment for | Christian Yost | Leacock, Pa. | Sept. 15, 1857. |
| 18525 | Scrapers, cotton | Jacob G. Winger | Vicksburg, Miss. | Oct. 27, 1857. |
| 18188 | Scythe-snathes | Abner H. Pinney | Columbus, Ohio | Sept. 8, 1857. |
| 18119 | Scythes to snathes, mode of attaching | Oliver Clark, assignor to Aaron H. Finney | Henrietta, Ohio | Sept. 1, 1857. |
| 18326 | Scythes to snathes, mode of attaching | William T. Clement | Shelburne Falls, Mass. | Oct. 6, 1857. |
| 18082 | Seed-drills | Jacob Mumma | Harriaburg, Pa. | Dec. 29, 1857. |
| 16511 | Seeding-machines | Erastus D. Wooding | Dixon, Ill. | Jan. 27, 1857. |
| 18772 | Seeding-machines | Lewis B. & Henry A. Myers, assignors to themselves and Isaac Myers | Massillon, Ohio | Mar. 3, 1857. |
| 18083 | Seeding-machines | Charles W. Caboon | Brooklyn, N. Y. | Sept. 1, 1857. |
| 18346 | Seeding-machines | Daniel & Austin S. Markham | Monmouth, Ill. | Oct. 6, 1857. |
| 18492 | Seeding-machines | H. B. Allen | Nelsonville, Ohio | Oct. 27, 1857. |
| 18579 | Seeding-machines | Albert Franklin | Genoa Cross Roads, Ohio | Nov. 10, 1857. |
| 18603 | Seeding-machines | E. Russell | Cotterville, Pa. | Nov. 10, 1857. |

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| 18730 | Seeding-machines | Jarvis Case | Springfield, Ill | Dec. 1, 1857. |
| 18735 | Seeding-machines | Jacob Geise and Jacob Brosius | Belleville, Ill | Dec. 1, 1857. |
| 18765 | Seeding-machines | David O. Page and John Clary | Dayton, Ohio | Dec. 1, 1857. |
| 18863 | Seeding-machines | Hiram Kellogg | McHenry, Ill | Dec. 15, 1857. |
| 18866 | Seeding-machines | Samuel Mills | New Castle, Ohio | Dec. 15, 1857. |
| 18862 | Seeding-machines | Charles C. James | Dayton, Ohio | Dec. 15, 1857. |
| 18881 | Seeding-machines | John Cretcherson, assignor to John Warren | Boston, Mass | Dec. 15, 1857. |
| 18959 | Seeding-machines | William Coggeshall and B. B. Warner | Massillon, Ohio | Dec. 29, 1857. |
| 18978 | Seeding-machines | James Lawson | Wadsworth, Ohio | Dec. 29, 1857. |
| 18380 | Seed-sowing machines | William C. Squier | Lawrence, Mass | Dec. 29, 1857. |
| 16698 | Separators, grain, and straw-carriers | Cornelius Van Dervee | Rockford, Ill | Oct. 6, 1857. |
| 16701 | Separators, grain, method of hanging the sieves of | Benjamin Wright | Albany, N. Y. | Feb. 24, 1857. |
| 16578 | Separators, grain-mills, &c., extension hoppers for | John Bean | Hudson, Mich | Feb. 24, 1857. |
| 18151 | Shearing-machines, sheep | J. V. Jenkins | Hudson, Mich | Feb. 10, 1857. |
| 16461 | Shearing sheep, machines for | R. P. Bradley | Jackson, Mich | Sept. 8, 1857. |
| 16720 | Shears, sheep | Edward G. Chambers | Cuyaboga Falls, Ohio | Jan. 27, 1857. |
| 17837 | Shovel, spade, or dung-fork handles | George C. Howard | Bucyrus, Ohio | March 3, 1857. |
| 18351 | Sod-cutters | Nelson Newman | Hardwick, Mass | July 21, 1857. |
| 16539 | Sowing grain and fertilizers, machines for | J. C. Gaston | Springfield, Ill | Oct. 6, 1857. |
| 17581 | Sowing grain in drills, machines for | Frederick Mochmann | Reading, Ohio | Feb. 3, 1857. |
| 16642 | Sowing seed broadcast, machines for | George Hall | Belleville, Ill | June 16, 1857. |
| 17429 | Sowing seed broadcast, machines for | D. Haldeman | Morgantown, Va | Feb. 3, 1857. |
| 17440 | Sowing seed broadcast, machines for | A. O. Miller | Morgantown, Va | June 3, 1857. |
| 18439 | Sowing seed broadcast, machines for | William A. Chapin | Morgantown, Va | June 2, 1857. |
| 18495 | Sowing seed broadcast, machines for | Jacob Boyer and D. S. Greer | St. Johnsbury, Vt | Oct. 20, 1857. |
| 18807 | Spades, steam | George M. Ramay | Granville, Va | Oct. 27, 1857. |
| 18479 | Spading land, machine for | William E. Ward | New York, N. Y. | March 10, 1857. |
| 18392 | Stemming and pollaking pea-nuts, method of | Samuel Shephard | Port Chester, N. Y. | Oct. 20, 1857. |
| 17207 | Straw-cutters | E. G. Cushing | Naahua, N. H. | Sept. 29, 1857. |
| 17850 | Straw-cutters | Jonathan L. Sullivan | Dryden, N. Y. | May 5, 1857. |
| 18084 | Straw-cutters | Aury G. Coes | Lexington, N. C. | July 21, 1857. |
| 18146 | Straw-cutters | Forster Hill and Charles E. Jones | Worcester, Mass | Sept. 1, 1857. |
| 18624 | Straw-cutters | Jesse Ball | Millport, N. Y. | Sept. 8, 1857. |
| 18887 | Straw-cutters | Moses Clements, deceased, William T. Clements, administrator of | Barnesville, Ohio | Nov. 17, 1857. |
| | | | Worcester, Mass | Dec. 15, 1857. |

I.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|------------------------|-----------------|
| 18346 | Straw-cutters..... | William Barrett..... | Stephentown, N. Y..... | Dec. 22, 1857. |
| 18369 | Threshing-cylinders, method of balancing | D. R. Averill, assignor to himself, James F. Davis, and Henry Twitchell..... | Pulaski, N. Y..... | Oct. 6, 1857. |
| 17062 | Threshing grain in the field, machines for | J. C. and T. G. Wilson..... | Cedar Hill, Texas..... | April 14, 1857. |
| 18436 | Threshing-machine for beating off pea-nuts from their vines..... | Thomas L. Colville and Samuel Shepherd..... | Nashua, N. H..... | Oct. 20, 1857. |
| 18455 | Threshing-machines, endless aprons of..... | Adolph Junge..... | Belleville, Ill..... | Oct. 20, 1857. |
| 18598 | Trees, mode of protecting, from canker-worms, &c..... | Andrew F. Nute..... | Roxbury, Mass..... | Nov. 10, 1857. |
| 17839 | Troughs, hog..... | Elmore Johnson..... | Winchester, Mass..... | July 21, 1857. |
| 16447 | Winnowing-machines..... | Joseph and James Montgomery..... | Baltimore, Md..... | Jan. 20, 1857. |
| 18567 | Winnowing-machines..... | John Shipley..... | Princeton, Wis..... | Dec. 15, 1857. |
| 17071 | Yokes, ox..... | Isaac K. Bennett..... | Narrows, Pa..... | April 21, 1857. |

CLASS II.—METALLURGY, and manufacture of metals, and instruments therefor.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|-------------------------|-----------------|
| 18485 | Amalgamators..... | Joseph A. Bertola, assignor to himself and John Stagg..... | New York, N. Y..... | Oct. 20, 1857. |
| 16525 | Anvils..... | Odin and Seth Brigham..... | Fitchburg, Mass..... | Feb. 3, 1857. |
| | Anger-handle fastenings. (See Class XIV, letter A.)..... | | | |
| 17078 | Awl-haft..... | N. S. Clement..... | Worcester, Mass..... | April 21, 1857. |
| 17558 | Axe-polls, machine for making..... | R. H. Cole..... | St. Louis, Mo..... | June 16, 1857. |
| 17732 | Axes, making, machines for..... | Charles Hutchins..... | East Douglas, Mass..... | Mar. 3, 1857. |
| 17639 | Axes, &c., hardening..... | James N. Rockwell..... | Napanock, N. Y..... | June 23, 1857. |

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| 18206 | Belt-tool | David A. J. Lamson | Cherry Valley, Mass | Sept. 16, 1857. |
| 18458 | Bending flanges on boiler-heads, machine for | David Howell | Louisville, Ky | Oct. 20, 1857. |
| 18068 | Bending-machine | Lewis Raymond | New York, N. Y | Aug. 25, 1857. |
| 17128 | Blacksmith's butters | Robert Killmer and Joshua Williams, assignors to Robert Killmer. | Newtown, Pa | April 21, 1857. |
| 17284 | Blacksmith's striker | Hartwell Kendall | East Dorset, Vt | May 12, 1857. |
| 17243 | Blind-fastenings | Horace Vansande | Middletown, Conn | May 5, 1857. |
| 18167 | Bolt for safes | Stuart Perry | Newport, N. Y | Sept. 8, 1857. |
| 17660 | Bolts and rivets, machine for making | Joel R. Bassett | Cincinnati, Ohio | June 30, 1857. |
| 18534 | Bolts, machine for making | R. H. Cole | St. Louis, Mo | Nov. 3, 1857. |
| 18193 | Bolts, socket for | H. W. Colender | New York, N. Y | Sept. 15, 1857. |
| 18775 | Bolts, threading machine for | William Sellers | Philadelphia, Pa | Dec. 1, 1857. |
| 17641 | Boring fine-sheets of steam-boilers, machine for. (See Class VI, letter B.) | William Sellers | Philadelphia, Pa | June 23, 1857. |
| 16564 | Boring-mills | Mary Ann Cannon, administratrix of John Cannon, assignor to | Warren, R. I | Feb. 3, 1857. |
| 18111 | Brass-kettle machine | New York and Brooklyn Brass Company-- | New York, N. Y | Sept. 1, 1857. |
| 18451 | Casting bearings in iron wheels | Charles Taylor | Little Falls, N. Y | Oct. 20, 1857. |
| 18924 | Casting, core-spindle for | D. A. Webster and G. F. Burroughs | New York, N. Y | Dec. 20, 1857. |
| 17109 | Casting car-wheels | A. A. Needham | Rockford, Ill | April 21, 1857. |
| 16864 | Casting, moulds for | Mortimer Nelson | New York, N. Y | Mar. 24, 1857. |
| 16988 | Casting railway car-wheels | Norman Aysworth | Rochester, N. Y | Feb. 24, 1857. |
| 17012 | Casting skeins for wagons | Andrew Leonard | Kenosha, Wis | April 7, 1857. |
| 17814 | Casting, cleaning, mill for | Henry R. Remsen, assignor to H. R. Remsen and W. J. Noyes. | Albany, N. Y | July 14, 1857. |
| 18490 | Centering-machine | E. F. Whiton | West Stafford, Conn | Oct. 20, 1857. |
| 18027 | Chain-machine | Lauriston Towne | Providence, R. I | Aug. 18, 1857. |
| 17694 | Chains, curb, machine for twisting | Lauriston Towne | Providence, R. I | June 30, 1857. |
| 16470 | Chilling plough-shares | James Oliver and Harvey Little | South Bend, Ind | Jan. 27, 1857. |
| 16506 | Clamp for soldering spectacles | George N. Cummings | Hartford, Conn | Jan. 27, 1857. |
| 16502 | Clamping-machine | Elbridge Wheeler | Marlboro, Mass | Jan. 27, 1857. |
| 17732 | Core-boxes | Abner Van Horn | New York, N. Y | July 7, 1857. |
| 17864 | Cores, dry sand | William Gage and R. B. Felthousen | Buffalo, N. Y | Dec. 29, 1857. |
| 18337 | Cores, dry sand | William Gage and R. B. Felthousen | Buffalo, N. Y | Oct. 6, 1857. |
| 16440 | Coupling, hose. (See Class XI, letter H.) | Norman C. Harris and Alonso Butler | Poultney, Vt | Jan. 20, 1857. |
| 17453 | Currycomb | E. T. Henry | Scranton, Pa | June 2, 1857. |
| | Die for making spikes | John F. Scharer | New York, N. Y | |
| | Die-stock | | | |

ii.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-------------------------|-----------------|
| 17707 | Die-stock..... | James Teschout..... | Waterford, N. Y..... | June 30, 1857. |
| 16372 | Dies..... | Robert Brayton..... | Buffalo, N. Y..... | Jan. 13, 1857. |
| 17476 | Dies for punching fork-tines..... | Leroy S. White, assignor to S. S. Rogers, E. W. Sperry, James H. Ashmead, and Edmund Hurlbut. | Hartford, Conn..... | June 2, 1857. |
| 17204 | Door-bolt..... | Jeremiah M. Crosby..... | Norwalk, Ohio..... | May 6, 1857. |
| 17464 | Door-bolt..... | Amos Westcott..... | Syracuse, N. Y..... | June 2, 1857. |
| 17474 | Door-bolts..... | Samuel R. Willmot, assignor to Samuel B. Guernsey. | Watertown, Conn..... | June 2, 1857. |
| 17843 | Door-bolts, cylindrical..... | Charles G. Page..... | Washington, D. C..... | July 21, 1857. |
| 17808 | Door-bolts, cylindrical, locking..... | Charles G. Page..... | Washington, D. C..... | July 14, 1857. |
| 18537 | Door-guard, elastic. (See Class IX, letter D.) | Samuel S. Day..... | New York, N. Y..... | Nov. 3, 1857. |
| 17887 | Door-knobs, rose for..... | Orrin Newton..... | Pittsburg, Pa..... | July 28, 1857. |
| 16612 | Door-knobs, spindle for..... | Alfred F. Chatman, assignor to A. F. Chatman and J. Pecard. | New York, N. Y..... | Jan. 27, 1857. |
| 17070 | Door spring..... | Gilbert L. Bailey..... | Portland, Me..... | April 21, 1857. |
| 18164 | Door-spring..... | E. P. Torrey and W. B. Tilton..... | New York, N. Y..... | Sept. 8, 1857. |
| 18987 | Door-spring..... | Charles A. Peck..... | New York, N. Y..... | Dec. 29, 1857. |
| 16324 | Door-springs..... | John Broughon..... | Chicago, Ill..... | Jan. 6, 1857. |
| 16769 | Door-springs..... | Leopold Thomas..... | Allegheny City, Pa..... | Mar. 3, 1857. |
| 17490 | Doors, catch for..... | Jeremiah W. Crosby..... | Norwalk, Ohio..... | June 3, 1857. |
| 18911 | Doors, glass knobs for..... | C. D. Kellogg and William M. Coan..... | Boston, Mass..... | Dec. 23, 1857. |
| 17944 | Drill, self-feeding..... | George C. Taft..... | Worcester, Mass..... | Aug. 4, 1857. |
| 16900 | Drill-shaft, feeding..... | George C. Taft, assignor to Henry W. Mason. | Worcester, Mass..... | Mar. 24, 1857. |
| 16552 | File-blanks, grinding, machine for..... | Robert G. Fine..... | Newark, N. J..... | Feb. 3, 1857. |
| 16681 | File-cutting machine..... | Isaac H. Collier..... | Poughkeepsie, N. Y..... | Feb. 24, 1857. |
| 17760 | File-cutting machine..... | William Van Auden..... | Poughkeepsie, N. Y..... | July 7, 1857. |
| 17928 | File-cutting machine..... | William Halliwell and Levi Osborne..... | Poughkeepsie, N. Y..... | Aug. 4, 1857. |
| 17468 | Filing saws for cotton-gins, machine for..... | Jonathan T. Turner..... | Bridgewater, Mass..... | June 2, 1857. |
| 18643 | Forge, portable..... | W. G. Hyndman..... | Cincinnati, Ohio..... | Nov. 17, 1857. |

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| 16531 | Forge, smiths' | John W. Crannell | Olivet, Mich. | Feb. 8, 1857. |
| 16537 | Forging gun-lock springs | George P. Foster | Bristol, R. I. | Feb. 8, 1857. |
| 16444 | Furnace, blast | William Kelly | Eddyville, Ky. | Jan. 20, 1857. |
| 18167 | Furnace, blast | Samuel Wilkes | Hammondville, Ohio | Sept. 8, 1857. |
| 17659 | Furnace, smelting | Charles C. Alger | Newburg, N. Y. | June 30, 1857. |
| 16560 | Furnaces, blast | H. Weisenborn | New York, N. Y. | Feb. 3, 1857. |
| 18061 | Furnaces, cupola | Philip W. Mackende | Jersey City, N. J. | Aug. 25, 1857. |
| 16841 | Furnaces, puddling | Jacob Green | Philadelphia, Pa. | Feb. 3, 1857. |
| 16999 | Gold-separator | E. L. Seymour | New York, N. Y. | April 7, 1857. |
| 17768 | Gold-washer and amalgamator | T. V. Tarnay | San Francisco, Cal. | July 31, 1857. |
| 16948 | Gold, washing, machine for | Samuel S. Lewis | San Juan, Cal. | Mar. 31, 1857. |
| 18509 | Grinding and polishing machine | Daniel Lovejoy and George F. Butterfield | Lowell, Mass. | Oct. 27, 1857. |
| 17398 | Grooves and slots, machine for cutting | Robert F. Underhill | Indianapolis, Ind. | May 26, 1857. |
| 16838 | Hanes, machine for making | Henry Burt and James T. Hedden | Newark, N. J. | Feb. 17, 1857. |
| 18408 | Hammers, machine for making | Russell B. Perkins | Meriden, Conn. | Oct. 13, 1857. |
| 16714 | Hammers, trip | Henry Bushnell | New Haven, Conn. | Mar. 3, 1857. |
| 18087 | Hatchet-heads, swaging, machine for | Levi Dodge | Cohoes, N. Y. | Sept. 1, 1857. |
| 16931 | Hinge | Kington Goddard | Philadelphia, Pa. | Mar. 17, 1857. |
| 16920 | Hinge | B. Hart | Marlette, Ohio | Mar. 31, 1857. |
| 17419 | Hinge, door | S. M. Bullard | Holliston, Mass. | June 2, 1857. |
| 17354 | Hinge, spring | Joseph S. Smith | New York, N. Y. | May 26; antedated March 12, 1857. |
| 18593 | Hinge, spring | John Maxson | De Ruyter, N. Y. | Nov. 10, 1857. |
| 16678 | Hinges | J. D. Browne | Cincinnati, Ohio | Feb. 24, 1857. |
| 18896 | Hinges, casting | Nicholas A. Fenner | Providence, R. I. | Dec. 32, 1857. |
| 16371 | Hoes, manufacture of | Samuel Boyd | New York, N. Y. | Jan. 13, 1857. |
| 16584 | Hoes, mode of attaching the eyes to the blades of | Henry Havell | Newark, N. J. | Feb. 10, 1857. |
| 17672 | Horse-shoe | William Cooper | Brooklyn, N. Y. | June 30, 1857. |
| 17542 | Horse-shoe nails, machine for forging | Robert Cook, assignor to himself and Samuel Norton | South Abington, Mass. | June 9, 1857. |
| 17491 | Horse-shoe nails, machine for making | Calvin Carpenter, Jr. | Providence, R. I. | June 9, 1857. |
| 17265 | Horse-shoes | David Cumming | Sorrel Horse, Pa. | May 12, 1857. |
| 18306 | Horse-shoes, attaching elastic soles to | William Somerville | Buffalo, N. Y. | Sept. 29, 1857. |
| 18940 | Horse-shoes, bending, machine for | Elbridge Wheeler | Marlboro', Mass. | Dec. 22, 1857. |
| 16691 | Horse-shoes, calk for | Edward Maynard | Williamsburg, N. Y. | Feb. 24, 1857. |
| 17665 | Horse-shoes, machine for making | Henry Burden | Troy, N. Y. | June 30, 1857. |
| 17441 | Horse-hoofs, paring, implement for | V. N. Mitchell | Concord, N. C. | June 2, 1857. |
| 16690 | Iron and steel, manufacture of | J. G. Martien | Newark, N. J. | Feb. 24, 1857. |

II.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|--------------------------|---|
| 17589 | Iron and steel, manufacture of..... | Robert Mushet..... | Coleford, England..... | May 26, 1857; Eng- land, Sept. 22, 1856. |
| 16798 | Iron, cast, enamelling..... | George W. Holley..... | Niagara, N. Y..... | Mar. 10, 1857. |
| 17561 | Iron, cast, making malleable..... | A. K. Eaton..... | New York, N. Y..... | June 16, 1857. |
| 16419 | Iron fences, method of constructing. (See Class IX, letter F.) | John B. Wickerham..... | New York, N. Y..... | Jan. 13, 1857. |
| 16679 | Iron fences, method of fastening the rails of, in the posts. | Christopher C. Bradley, jr..... | Syracuse, N. Y..... | Feb. 24, 1857. |
| 17628 | Iron kettles, cast, grinding the inner surface of. | William Kelly..... | Lyon county, Ky..... | June 23; reissued Nov. 3, 1857. |
| 18347 | Iron, manufacture of..... | George P. Miller and Hugh Dougherty..... | Lancaster, Pa..... | Oct. 6, 1857. |
| 18910 | Iron, melting and refining..... | William Kelly..... | Lyon county, Ky..... | Dec. 22, 1857. |
| 16775 | Iron, refining..... | | | |
| | Iron spoons, making. (See Class XVII, letter S.) | | | |
| | Iron spoons, making. (See Class XVII, letter S.) | | | |
| 16775 | Iron, swaging, machine for..... | Junius Foster, assignor to J. Herbold, George Kuhn, and Junius Foster. G. J. Olendorf, E. R. Tripp, and S. Harper. | Brooklyn, N. Y..... | Mar. 3, 1857. |
| 16991 | Jack, trimming..... | Stuart Perry..... | Cooperstown, N. Y..... | April 7, 1857. |
| 17939 | Key..... | Thomas K. Webster..... | Newport, N. Y..... | Aug. 4, 1857. |
| 18654 | Key for door-locks..... | Edmund Field..... | Lawrence, Mass..... | Nov. 17, 1857. |
| 17792 | Key-holes, sawtooth for..... | Hiram Pierce..... | Greenwich, Conn..... | Mar. 10, 1857. |
| 17634 | Knife-blades, machine for straightening..... | Anthony Hankey and Francis Styles, Jr., assignors to themselves and Frederick S. Taylor. | Claremont, N. H..... | June 23, 1857. |
| 17952 | Knives, grinding, machine for..... | Conrad Poppenhusen and C. F. E. Simon, assignors to Conrad Poppenhusen. A. E. Morgan, assignor to himself, D. Todd, and John B. Woddlie. | Leicester, Mass..... | Aug. 4, 1857. |
| 16955 | Knives, table, making..... | V. B. David..... | College Point, N. Y..... | Mar. 31, 1857. |
| 17908 | Latch, gate..... | | Poughkeepsie, N. Y..... | July 28, 1857. |
| 16908 | Lock..... | | Newark, Ill..... | Mar. 31, 1857. |

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|-------|--|--|------------------------|-----------------|
| 17424 | Look | Julius M. Cook | Hinsdale, N. Y. | June 2, 1857. |
| 17013 | Lock, car | Henry Ritchie, assignor to himself, Samuel C. Thompson, and G. W. Westerfield. | Newark, N. J. | April 7, 1857. |
| 17412 | Lock, door | Thomas B. Atterbury | Pittsburg, Pa. | June 2, 1857. |
| 18169 | Lock, pad | Linus Yale | Newport, N. Y. | Sept. 8, 1857. |
| 17681 | Lock, permutation. (See Class IX, letter R.) | Frank G. Johnson | Brooklyn, N. Y. | June 30, 1857. |
| 17747 | Lock, sash | M. P. Norton | Troy, N. Y. | July 7, 1857. |
| 18155 | Lock, sash | William Patton | Towanda, Pa. | Sept. 8, 1857. |
| 16749 | Locks | J. Christian Rethmuller | Pittsburg, Pa. | Mar. 9, 1857. |
| 16892 | Locks | William Whiting and Henry Pickford | Boston, Mass. | Mar. 24, 1857. |
| 17139 | Locks | Leger Dae | Illon, N. Y. | April 28, 1857. |
| 17245 | Locks | A. Williams and E. P. Cummings | Philadelphia, Pa. | May 5, 1857. |
| 17293 | Locks | Stuart Perry | Newport, N. Y. | May 12, 1857. |
| 17714 | Locks | Ludwig Baier, assignor to Joseph Lippincott and William C. Barr. | Pittsburg, Pa. | June 30, 1857. |
| 17740 | Locks | Henry Isham | New Britain, Conn. | July 7, 1857. |
| 17816 | Locks | William Whiting and Henry Pickford | Boston, Mass. | July 14, 1857. |
| 17804 | Locks | L. F. Munger | Le Roy, N. Y. | July 14, 1857. |
| 18182 | Locks | John P. Sherwood | Fort Edward, N. Y. | Sept. 8, 1857. |
| 18238 | Locks | H. W. Covert | Rochester, N. Y. | Sept. 16, 1857. |
| 18243 | Locks | Joseph L. Hall | Cincinnati, Ohio | Sept. 22, 1857. |
| 17611 | Locks and latches, keeper for | Andrew Patterson, assignor to J. H. Jones. | Birmingham, Pa. | June 16, 1857. |
| 17150 | Locks, chronometric. | Amos Holbrook and Henry D. Fish | Milford, Mass. | April 28, 1857. |
| 16676 | Locks, door, right and left hand, keeper for | Calvin Adams | Oak Hill, N. Y. | Feb. 24, 1857. |
| 18372 | Metal caps for nail-heads, machine for cutting | Zachariah Walsh, assignor to Cornelius Walsh. | Newark, N. J. | Oct. 6, 1857. |
| 17813 | Metal, cutting, machine for | James Tellow | Salem, Mass. | July 14, 1857. |
| 17364 | Metal, cutting and bending sheet, machine for | Elias F. Coates | Mystic Bridge, Conn. | May 26, 1857. |
| 16505 | Metal, forging, machines for | E. Wheeler | Feltonville, Mass. | Jan. 27, 1857. |
| 17589 | Metal pans, sheet, beeding | E. A. Smead | Tioga, Pa. | June 16, 1857. |
| 18019 | Metal plates, machine for bending | Julius Perry | Plymouth Hollow, Conn. | Aug. 18, 1857. |
| 18011 | Metal plates, machine for bending | E. L. Gaylord | Terrysville, Conn. | Aug. 18, 1857. |
| 18582 | Metal plates, machine for bending | E. L. Gaylord | Terrysville, Conn. | Nov. 3, 1857. |
| | Metal roofs, sheet, machine for seaming. (See Class IX, letter R.) | | | |
| 17721 | Metal-separator | Edward Borlase | Bristol, Conn. | July 7, 1857. |
| 16481 | Metal, sheet, cutting | Samuel Hall | New York, N. Y. | Jan. 27, 1857. |
| 16337 | Metal, sheet, forming joints of | J. J. Leubach | Easton, Pa. | Jan. 6, 1857. |

II.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-------------------------|-----------------|
| 16456 | Metal, sheet, machine for bending | John Wright, assignor to the Stow Manufacturing Company. | Plantville, Conn | Jan. 20, 1857. |
| 16853 | Metal, sheet, machine for cutting and bending | Elliot Savage | East Berlin, Conn | Mar. 17, 1857. |
| 18130 | Metal, sheet, machine for cutting figures out of | C. P. S. Betts | New York, N. Y. | Sept. 8, 1857. |
| 18804 | Metal, sheet, roller for bending | Daniel Newton | Southington, Conn. | Mar. 10, 1857. |
| 18918 | Metal tubes, implement for cutting | Thomas J. Lloyd | Pottsville, Pa. | Dec. 22, 1857. |
| 18811 | Metallic bars, machine for cutting | Samuel Hall | New York, N. Y. | Dec. 8, 1857. |
| 16631 | Metallic beads, manufacture of | John R. Wendt, assignor to J. R. Wendt and Augustus Rogers. | Boston, Mass. | Feb. 10, 1857. |
| | Metallic screw-cap for jars, &c. (See Class XVII, letter J.) | | | |
| 17040 | Metals, coating, with silver | Levi L. Hill | Hudson, N. Y. | April 14, 1857. |
| 18116 | Metals, forging, machine for | Elbridge Wheeler | Feltonville, Mass | Sept. 1, 1857. |
| 17876 | Metals, punching and shaping, machine for | George Haeitline | Washington, D. C. | July 28, 1857. |
| 18782 | Moulding shells, machine for | W. H. Ward | Auburn, N. Y. | Dec. 1, 1857. |
| 18617 | Nail, horse-shoe, machine | John Wootton | Boonton, N. J. | Nov. 10, 1857. |
| 17523 | Nail-machine | E. W. Scott and A. M. George. | Lowell, Mass. | June 9, 1857. |
| 18457 | Nail-machine | J. S. King | Raynham, Mass. | Oct. 20, 1857. |
| 17273 | Nail-plate feeder | John C. Gould | Boonton, N. J. | May 12, 1857. |
| 17778 | Nail-plate holder | William Battelle | New Castle, Pa. | July 14, 1857. |
| 19007 | Nails, covering the heads of | William H. Van Gieson, assignor to himself, S. M. Buckingham, and E. Brown. | Waterbury, Conn | Dec. 29, 1857. |
| 17941 | Nails, forging, machine for | Samuel J. Seely, assignor to John M. Hood. | New York, N. Y. | Aug. 4, 1857. |
| 18428 | Nails, trunk, machine for polishing the heads of | Cornelius and Zachariah Walsh, assignors to Cornelius Walsh. | Newark, N. J. | Oct. 13, 1857. |
| 17502 | Nails, wrought, machine for making | Smith Gardiner | New York, N. Y. | June 9, 1857. |
| 17634 | Nut-machine | Samuel H. Whitaker | Cincinnati, Ohio | June 9, 1857. |
| 18259 | Nut-machine | S. H. Whitaker | Cincinnati, Ohio | Sept. 22, 1857. |
| 18499 | Nut-machine | R. H. Cole | St. Louis, Mo. | Oct. 27, 1857. |
| 18892 | Nut-machine | J. C. Day | Jersey City, N. J. | Dec. 22, 1857. |
| 16507 | Nut-machines | S. H. Whitaker | Cincinnati, Ohio | Jan. 27, 1857. |
| 17197 | Nut-machines | R. H. Cole | St. Louis, Mo. | May 6, 1857. |

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|-------|---|---|-------------------|---|
| 17914 | Nut-machines. | Robert Baynton | Buffalo, N. Y. | Aug. 4, 1857. |
| 18156 | Nuts, forging, machine for | Edward Paye and Samuel Hall | New York, N. Y. | Sept. 8, 1857. |
| 17734 | Nuts, tapping, machine for | Almon B. Glover | Birmingham, Conn. | July 7, 1857. |
| 16495 | Ore-cleaners | David Pollock | Leicester, Pa. | Jan. 27, 1857. |
| 17374 | Ore-crushing machine | Samuel F. Dodge | Detroit, Mich. | May 26, 1857. |
| 18038 | Ore, separating | Thomas J. Chubb | New York, N. Y. | Aug. 26, 1857. |
| 18085 | Ore-separator | Thomas J. Chubb | New York, N. Y. | Sept. 1, 1857. |
| 18388 | Ore-separator | Thomas J. Chubb | New York, N. Y. | Oct. 13, 1857. |
| 18672 | Ore-separator | William C. Bourne | New York, N. Y. | Nov. 24, 1857. |
| 17385 | Ore-washer | Pierre P. Martin | Paris, France | May 26, 1857; France, May 13, 1856. |
| 18406 | Ore-washer | Joseph Paul | Clifton, Mich. | Oct. 13, 1857. |
| 18789 | Ores of gold and silver, treatment of | Joseph A. Bertola, assignor to himself and John Stagg | New York, N. Y. | Dec. 1, 1857. |
| 17396 | Ores, zinc, apparatus for reducing | Alfred Monnier | Camden, N. J. | May 19, 1857. |
| 18045 | Pin-sticking machine | Thaddeus Fowler | Waterbury, Conn. | Aug. 26, 1857. |
| 18831 | Pins on paper, sticking, machine for | Thaddeus Fowler, assignor to the American Pin Company | Waterbury, Conn. | Dec. 8, 1857. |
| 18116 | Pipe-coupling | Elisur Wright | Boston, Mass. | Sept. 1, 1857. |
| 16663 | Pipe, gas, machine for fitting | Caleb C. Walworth | Boston, Mass. | Feb. 17, 1857. |
| 17482 | Pipe, stove, machine for grooving | Charles Bigelow | Hastings, Min. | June 9, 1857. |
| 17393 | Pipe, stove, machine for making | M. C. Root | Toledo, Ohio | May 26, 1857. |
| | Rivetting boilers, machine for. (See Class VI, letter B.) | | | |
| 16967 | Rivets, making, machine for | R. H. Cole | St. Louis, Mo. | April 7, 1857. |
| 18738 | Rolling beams, pile for | John Griffin | Phoenixville, Pa. | Dec. 1, 1857. |
| 18906 | Rolling cornice, machine for | Ass Johnson | Calro, N. Y. | Dec. 22, 1857. |
| 18674 | Rolling-mills, application of hot water to journals of. | John Bryan | Covington, Ky. | Nov. 24, 1857; Eng- land, Sept. 4, 1857. |
| 18962 | Safes, burglar-proof | Leopold Edilts | New York, N. Y. | Dec. 29, 1857. |
| 16464 | Sash-fastener | John Broughton | Chicago, Ill. | Jan. 27, 1857. |
| 16595 | Sash-fastener | W. W. Kellogg | Lynn, Mass. | Feb. 10, 1857. |
| 16671 | Sash-fastener | Thomas Floyd, assignor to T. Floyd and G. H. Merklein | Chambersburg, Pa. | Feb. 17, 1857. |
| 17910 | Sash-fastener | F. Tarbell, assignor to himself and D. C. Rictnell | Boston, Mass. | July 28, 1857. |
| | Saw-clamp. (See Class XIV.) | | | |
| 16695 | Saw-fler | Archibald Robbins, Alanson Shewman, and Lawson B. Bigelow | Watkins, N. Y. | Feb. 24, 1857. |

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| 18806 | Shears, rotary..... | Anson Hardy and George A. Rollins | Boston, Mass..... | Oct. 27, 1857. |
| 17453 | Shovels, making, machines for..... Spectacle-bows, machine for expanding. (See Class VIII, letter S.) | David B. Rogers..... | Nashua, N. H..... Pittsburg, Pa..... | June 2, 1857. |
| 18294 | Spikes..... | Orrin Newton..... | Pittsburg, Pa..... | Sept. 29, 1857. |
| 16958 | Spikes, clenching, mode of..... | Horatio Bates..... | New York, N. Y..... | April 7, 1857. |
| 16483 | Springs, coil, machine for making..... | James Harrison, Jr..... | New York, N. Y..... | Jan. 27, 1857. |
| 18991 | Springs, volute, machine for making..... | Daniel G. Rollin..... | New York, N. Y..... | Dec. 29, 1857. |
| 16794 | Steel plates, machine for shearing..... | Perry G. Gardiner..... | New York, N. Y..... | Mar. 10, 1857. |
| 17172 | Steel plates, tempering..... | Henry A. Seymour..... | Bristol, Conn..... | April 26, 1857. |
| 16793 | Steel springs, coiling, machine for..... | Perry G. Gardiner..... | New York, N. Y..... | Mar. 10, 1857. |
| 17140 | Steel and other metals, gilding and ornamenting..... | A. Henry Dufresne..... | Paris, France..... | April 28, 1857; Franco, May 14, 1856. |
| 17590 | Tin pans, wiring..... | E. A. Smead..... | Toga, Pa..... | June 16, 1857. |
| 17738 | Tire, upsetting..... | Rockwell Hazen and Volney Gibbs..... | Homer, Mich..... | July 7, 1857. |
| 16831 | Tires, upsetting, machine for..... | Russell W. Gates..... | Homer, Mich..... | Jan. 6, 1857. |
| 18563 | Tires, method of expanding..... | Samuel Penberthy..... | Chicago, Ill..... | Nov. 3, 1857. |
| | Tires on carriage-wheels, mode of tightening. (See Class X, letter C.) | | | |
| | Tires on wheels, machine for setting. (See Class X, letter W.) | | | |
| 18971 | Tongs, blacksmiths'..... | William Hart..... | Mayville, Wis..... | Dec. 29, 1857. |
| 18970 | Tool for turning journals..... | James Hall..... | New Haven, Conn..... | Dec. 29, 1857. |
| 17301 | Tools, soldering, heating, by gas..... | J. Henry Stimpson..... | Boston, Mass..... | May 12, 1857. |
| 16363 | Tubes, cap, making..... | Nathaniel Whitmore, assignor to himself and G. W. Keene..... | Somerville, Mass..... Lynn, Mass..... | Jan. 6, 1857. |
| 16350 | Tubes, seamless, making..... | William S. Platt, assignor to W. S. Alfred and Clark M. Platt..... | Waterbury, Conn..... | Feb. 10, 1857. |
| 16395 | Tubes, tapering, machine for rolling..... | William Ostrander..... | New York, N. Y..... | Jan. 13, 1857. |
| 18205 | Wire, pointing, machine for..... | C. Jilleon..... | Worcester, Mass..... | Sept. 15, 1857. |
| 16790 | Wire-rope, machinery for making..... | Joseph Cushman..... | Racine, Wis..... | Mar. 10, 1857. |
| 18080 | Wiring blind-rods, machine for..... | Byron Boardman..... | Norwich, Conn..... | Sept. 1, 1857. |
| 16997 | Wrench..... | Ezra Ripley..... | Troy, N. Y..... | April 7, 1857. |
| 17631 | Wrench..... | Edward J. Worcester..... | Worcester, Mass..... | June 9, 1857. |
| 17737 | Wrench..... | John H. Hathaway..... | Millbury, Mass..... | July 7, 1857. |
| 18135 | Wrench..... | H. M. Clark..... | New Britain, Conn..... | Sept. 8, 1857. |
| 18266 | Wrench..... | Henry D. Blake, assignor to W. H. Warner..... | New Hartford, Conn..... | Sept. 22, 1857. |
| 17844 | Wrench, hand..... | G. B. Phillips..... | Albany, N. Y..... | July 21, 1857. |

II.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|----------------------------|---|----------------------|-----------------|
| 16733 | Wrench, screw..... | B. F. Joelyn..... | Worcester, Mass..... | Mar. 3, 1857. |
| 16844 | Wrench, screw..... | B. F. Joelyn..... | Worcester, Mass..... | Mar. 17, 1857. |
| 17609 | Wrench, screw..... | George C. Taft, assignor to Henry W. Mason. | Worcester, Mass..... | June 16, 1857. |
| 17229 | Wrenches..... | Charles FINDER..... | Lowell, Mass..... | May 5, 1857. |

CLASS III.—MANUFACTURES OF FIBROUS AND TEXTILE SUBSTANCES, including machines for preparing fibres of wool, cotton, silk, fur, paper, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|------------------------|----------------------------------|
| 17120 | Bobbins, conical, machinery for winding..... | C. Tompkins and J. Johnson..... | Troy, N. Y..... | April 21, 1857. |
| 17929 | Bobbins for roving and stubbing..... | Isaac Hayden..... | Lawrence, Mass..... | Aug. 4, 1857. |
| 16744 | Card-cylinders, machinery for grinding..... | Jonathan Parker..... | Biddeford, Me..... | Mar. 3, 1857. |
| 18124 | Carding-engines..... | Horatio N. Gambrill and Singleton F. Burgee. | Woodbury, Md..... | Sept. 1; England April 14, 1857. |
| 18257 | Carding-engines..... | William H. Walton and George H. Phinney..... | New York, N. Y..... | Sept. 22, 1857. |
| 16504 | Carding-engines, the top flats of, machinery for stripping..... | George Wellman..... | Brooklyn, N. Y..... | Jan. 27, 1857. |
| 17094 | Carding-machines..... | H. Houghton..... | Somers, Conn..... | April 21, 1857. |
| 18423 | Carding machines..... | Joseph Davis, assignor to himself and Royal Southwick. | East Wilton, N. H..... | Oct. 13, 1857. |
| 18787 | Carding-machines, cleaning the top cards of, machinery for..... | Horace Woodman..... | Biddeford, Me..... | Dec. 1, 1857. |
| 16437 | Carpets and rugs, double pile, manufacture of..... | John Golding..... | Worcester, Mass..... | Jan. 20, 1857. |
| 17964 | Cleaning and carding moss..... | L. Boudreaux..... | Thibodeaux, La..... | Aug. 4, 1857. |

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|-------|--|---|-------------------------|----------------------------------|
| 16783 | Cloth, felt, manufacture of. | George G. Babop. | Norwalk, Conn. | Mar. 10, 1867. |
| 17950 | Cloth, gore, elastic. | Charles Windlow. | Lynn, Mass. | Aug. 4; released Sept. 16, 1867. |
| 16685 | Cloth, napping, gig-mills for. | Ernest Geesner. | Due, Saxony. | Feb. 24, 1867. |
| 17237 | Cloth, napping, machinery for. | John C. Millar and C. N. Tyler. | Susquehanna county, Pa. | May 6, 1867. |
| 16796 | Cloth, shearing, machine for. | Milton D. Whipple, assignor to A. B. Ely. | Charlestown, Mass. | Dec. 1, 1867. |
| 17224 | Cloth, turning the edges of, machines for. | John P. Marston. | Charlestown, Mass. | May 5, 1867. |
| 17164 | Cop-tubes. | J. Marland and E. Crockett. | Lawrence, Mass. | April 28, 1867. |
| 16694 | Cordage-machines. | James Pine. | Hoodick Falls, N. Y. | Feb. 24, 1867. |
| 18667 | Cordage-machines. | James P. Arnold. | Louisville, Ky. | Mar. 24, 1867. |
| 17310 | Cordage-machines. | James P. Arnold. | Louisville, Ky. | May 19, 1867. |
| 16452 | Cordage-machines, laying tops for. | William Robinson, assignor to himself and Amos W. Beardsley. | Warsaw, N. Y. | Jan. 20, 1867. |
| 18454 | Cotton-cleaners. | Jesse Johnson. | Hempstead county, Ark. | Oct. 20, 1867. |
| 17819 | Cotton-cleaning. | Lewis S. Chichester, assignor to Henry G. Evans. | New York, N. Y. | July 14, 1867. |
| 18742 | Cotton-cleaning, long trunks for. | Isaac Hayden. | Lawrence, Mass. | Dec. 1, 1867. |
| 16526 | Cotton-cleaning, machines for. | F. A. Calvert and C. G. Sargent. | Lowell, Mass. | Feb. 3, 1867. |
| 18670 | Cotton flannel. | Albert S. Carleton. | Clinton, Mass. | Mar. 24, 1867. |
| 18410 | Cotton-gin feeders. | Jedediah Prescott. | Rockford, Ill. | Oct. 13, 1867. |
| 16394 | Cotton-gins. | James F. Orr. | Orrville, Ala. | Jan. 13, 1867. |
| 16488 | Cotton-gins. | Edwin Keith. | Bridgewater, Mass. | Jan. 27, 1867. |
| 16565 | Cotton-gins. | L. S. Chichester, assignor to H. G. Evans. | New York, N. Y. | Feb. 3, 1867. |
| 17806 | Cotton-gins. | Daniel Pratt. | Prattville, Ala. | July 14, 1867. |
| | Cotton-gins, machine for filling saws for. (See Class II, letter F.) | | | |
| 16699 | Cotton-gins, manufacturing ribs for. | John W. Webb. | Cotton Valley, Ala. | Feb. 24, 1867. |
| 17155 | Cotton-gins, saw, brushes of. | Edwin Keith. | Bridgewater, Mass. | April 28, 1867. |
| 16833 | Cotton, wool, fur and other fibrous materials, cleaning and separating, machinery for. | Isaac Hayden. | Lawrence, Mass. | Mar. 17, 1867. |
| 17612 | Fabrics, knitted. | Joseph Vickerstaff, assignor to Martin Laudeaberger. | Philadelphia, Pa. | June 16, 1867. |
| 17020 | Felt-cloth, crossing the fibres of wool in making machinery for. | Thomas B. Butler. | Norwalk, Conn. | April 14, 1867. |
| 17628 | Felt-cloth, machines for manufacturing. | Thomas R. Butler. | Norwalk, Conn. | July 21, 1867. |
| 17487 | Felt-cloth, manufacturing, machinery for. | Thomas B. Butler. | Norwalk, Conn. | June 9, 1867. |
| 18487 | Felt garments, seamless, manufacturing. | D. W. Gitchell and L. W. Badger, assignors to the Seamless Garment Manufacturing Company. | Matteawan, N. Y. | Oct. 20, 1867. |

III.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|--------------------------|---------------------------------------|
| 16431 | Felting, bats for, machines for forming..... | John H. Bloodgood..... | New York, N. Y. | Jan. 20, 1857. |
| 17420 | Fibre of banana, plaintain, aloe, &c., machinery for preparing the..... | Francis Burke..... | British West Indies..... | June 2, 1857; England, July 14, 1856. |
| 18204 | Fibrous and textile substances, method of treating, in a vacuum for cleansing purposes..... | Julius A. Jilison and Henry Whinfield..... | Poughkeepsie, N. Y. | Sept. 16, 1857. |
| 16865 | Fibrous materials, combing-machines for..... | Milton D. Whipple, assignor to A. B. Ely..... | Charlestown, Mass..... | Mar. 17, 1857. |
| 16838 | Fibrous materials, method of cleansing..... | John Howarth..... | Salem, Mass..... | Mar. 17, 1857. |
| 18868 | Fibrous substances for spinning, machinery for preparing..... | James Apperly and William Gillesold..... | Dudbridge, England..... | Dec. 22, 1857; England, Dec. 4, 1856. |
| 18901 | Flax, hemp, and other fibrous material, mode of treating..... | John W. Burton and George Pyle..... | Eye, England..... | Dec. 8, 1857; England, Mar. 20, 1856. |
| 16977 | Fringes, cutting, machines for..... | William J. Horstmann..... | Ipswich, England..... | April 7, 1857. |
| 16543 | Hat-bats, felt, machines for forming..... | Washington G. Haganan..... | Philadelphia, Pa..... | Feb. 3, 1857. |
| 17083 | Hat-bodies, blocking, machines for..... | William A. Fenn..... | New Milford, Conn..... | April 21, 1857. |
| 16823 | Hat-bodies, felting, machines for..... | James Blaklee and E. R. Barnes..... | Newtown, Conn..... | Mar. 17, 1857. |
| 16973 | Hat-bodies, felting, machines for..... | William Fuzzard..... | Cambridgeport, Mass..... | April 7, 1857. |
| 17115 | Hat-bodies, felting, machines for..... | Henry L. Randall..... | Roxbury, Conn..... | April 21, 1857. |
| 18316 | Hat-bodies, forming and hardening, machines for..... | Alonso C. Arnold..... | Norwalk, Conn..... | Oct. 6, 1857. |
| 16426 | Hat-bodies, machinery for forming..... | Ira Gill, assignor to Ira Gill and Elbridge Brown..... | Walpole, Mass..... | Jan. 13, 1857. |
| 18181 | Hat-bodies, machines for hardening..... | Joseph Booth..... | Newark, N. J..... | Sept. 15, 1857. |
| 18034 | Hat-bodies, manufacturing, machinery for..... | Joseph Booth..... | Newark, N. J..... | Aug. 26, 1857. |
| 16338 | Hats..... | Evan Morris..... | Philadelphia, Pa..... | Jan. 6, 1857. |
| 17033 | Hats, felt, brims of, machines for forming the..... | William A. Fenn..... | New Milford, Conn..... | April 14, 1857. |
| 16588 | Hats, felt, method of surfacing..... | Alvin Hurd..... | Danville, Conn..... | Feb. 10, 1857. |
| 17318 | Hats, &c., treating straw braid for, method of..... | George Cornwall, 2d..... | Milford, Conn..... | May 19, 1857. |
| 16365 | Hemp-brakes..... | Samuel H. Little..... | St. Louis, Mo..... | Jan. 6, 1857. |
| 17015 | Hemp-brakes..... | James Barkley..... | St. Louis, Mo..... | April 7, 1857. |
| 17092 | Hemp-brakes..... | Wade W. Hampton..... | Winchester, Va..... | April 21, 1857. |
| 17274 | Hemp-brakes..... | J. L. Hardeman..... | Arrow Rock, Mo..... | May 12, 1857. |
| 17900 | Hemp-brakes..... | Stephen Stafford..... | Carroll county, Mo..... | July 28, 1857. |

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|-------|---------------------------------------|--|-----------------------|---|
| 18303 | Hemp-brakes | Conrad Simon | Louisville, Ky | Sept. 29, 1857. |
| 18657 | Hemp-brakes | G. F. S. Zimmerman and A. Beattie | St. Joseph, Mo | Nov. 17, 1857. |
| 18638 | Hemp-cutter | John L. Hardeman | Arrow Rock, Mo | Nov. 17, 1857. |
| 17795 | Hemp-drawing machines | Samuel Lownds | Brooklyn, N. Y. | July 14, 1857. |
| 16375 | Knitting-machines | Enoch Colvin | Poultney, Vt. | Jan. 13, 1857. |
| 18725 | Knitting-machines | Walter Alken | Franklin, N. H. | Dec. 1, 1857. |
| 18793 | Knitting-machines | S. D. Fairbanks, assignor to himself and Charles H. Adams | Cohoes, N. Y. | Dec. 1, 1857. |
| 18121 | List-speeders, condensers for | William Matteson, assignor to John C. Whitin | Northbridge, Mass. | Sept. 1, 1857. |
| 16415 | Loom, power | William Weld | Manchester, England | Jan. 13, 1857; England, Mar. 7, 1855. |
| 16354 | Looms | François Durand | Paris, France | Jan. 6, 1857. |
| 16405 | Looms | Daniel W. Snell and S. S. Bartlett | Woonsocket, R. I. | Jan. 13, 1857; reissued Sept. 1, 1857; additional improvement Oct. 6, 1857. |
| 17353 | Looms | Nathaniel B. Carney, assignor to J. B. Livingston, Charles H. Haswell, and Russell C. Root, trustees | New York, N. Y. | May 19, 1857. |
| 17375 | Looms | William H. Howard | Philadelphia, Pa. | May 26, 1857. |
| 17404 | Looms | Franklin Painter, assignor to the Nashawannuck Manufacturing Company | East Hampton, Mass. | May 26, 1857. |
| 18061 | Looms | Edwin A. Scholfield | Westerly, R. I. | Aug. 25, 1857. |
| 17189 | Looms for weaving pile-fabrics | E. B. Bigelow | Boston, Mass. | May 5, 1857. |
| 16370 | Looms for weaving pile-fabrics double | E. B. Bigelow | Boston, Mass. | Jan. 13, 1857. |
| 16392 | Looms, hand | Stephen C. Mendenhall | Richmond, Ind. | Jan. 13, 1857. |
| 18208 | Looms, harness for | George Matoon | Chicopee Falls, Mass. | Sept. 15, 1857. |
| 17267 | Looms, hook-templates for | W. W. Dutcher and George Draper | Millford, Mass. | May 12, 1857. |
| 17193 | Looms, picker-motion for | Samuel Boorn | Lowell, Mass. | May 5, 1857. |
| 17468 | Looms, pickers for | Thomas J. Mayall, assignor to himself and George N. Davis | Roxbury, Mass. | June 2, 1857. |
| 16824 | Looms, power | John L. Cheney | Lowell, Mass. | Mar. 17, 1857. |
| 17912 | Looms, power | Andrew Allen | Wilmington, Del. | Aug. 4, 1857. |
| 18320 | Looms, power, for weaving wire cloth | E. B. Bigelow | Clinton, Mass. | Oct. 6, 1857. |
| 17926 | Looms, power, set-off motion of | William H. Gray | Dover, N. H. | Aug. 4, 1857. |
| 17559 | Looms, roller-temple for | Warren W. Dutcher | Millford, Mass. | June 16, 1857. |
| 17323 | Looms, shuttle-motion for | Levi Ferguson | Lowell, Mass. | May 19, 1857. |
| 17746 | Paper cop-tubes | Alexander McCausland | Providence, R. I. | July 7, 1857. |

III.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|-------|---|---|--------------------------|---|
| 17050 | Paper, drying and pressing, machine for..... | John North..... | Middletown, Conn..... | Apr 14, 1857; re- sued May 19, 1857. |
| 17352 | Paper-folding, machines for..... | Edward N. Smith, assignor to S. T. Bacon..... | Springfield, Mass..... | May 19, 1857. |
| 17663 | Paper, machines for making..... | Edward B. Bingham..... | Brooklyn, N. Y..... | June 30, 1857. |
| 17917 | Paper, machines for making..... | Patrick Clark..... | Rahway, N. J..... | Aug. 4, 1857. |
| 16430 | Paper-making, machinery for..... | John S. Blake..... | Claremont, N. H..... | Jan. 20, 1857. |
| 18389 | Paper-pulp, from beet and other refuse, pre- paring..... | Robert H. Collyer..... | Camden, N. J..... | Oct. 13, 1857. |
| 18190 | Paper-pulp from ivory, making..... | William N. Clark..... | Cherter, Conn..... | Sept. 15, 1857. |
| 17387 | Paper-pulp, making..... | M. A. Charles Mellier..... | Paris, France..... | May 26, 1857; France, Aug. 7, 1854; Eng- land, Oct. 26, 1855. |
| 16949 | Paper-pulp, manufacture of..... | Columbus F. Sturgis..... | Carlowville, Ala..... | Mar. 31, 1857. |
| 16994 | Paper-rolling machines..... | Charles L. Pond..... | Buffalo, N. Y..... | April 7, 1857. |
| 17895 | Paper-stuff, treating..... | J. A. Roth..... | Philadelphia, Pa..... | July 28, 1857. |
| 16927 | Pasteboard, making, machines for..... | Louis Koch..... | New York, N. Y..... | Mar. 31, 1857. |
| 17489 | Pasteboard or paper, machines for drying..... | Patrick Clark..... | Rahway, N. J..... | June 9, 1857. |
| 16928 | Pasteboard, pressing water out of, machinery for..... | Louis Koch..... | New York, N. Y..... | Mar. 31, 1857. |
| 17723 | Pasteboard, &c., machine for cutting..... | Denzlow Burhaus..... | Burlington, Iowa..... | July 7, 1857. |
| 17764 | Rolls, drawing, covering for..... | Joseph M. Smith..... | Manchester, N. H..... | July 7, 1857. |
| 17496 | Rope-machines..... | William R. Dutcher..... | Lansburg, N. Y..... | June 9, 1857. |
| 17787 | Rope-machines..... | Ezekiel Guile..... | St. Louis, Mo..... | July 14, 1857. |
| 17005 | Rope, making, machinery for..... | Milton Wallwork..... | Hoosick Falls, N. Y..... | April 7, 1857. |
| 17084 | Rope, making, machines for..... | Harvey W. Fowler..... | Hoosick Falls, N. Y..... | April 21, 1857. |
| 16842 | Rope-manufacture..... | Michael H. Johnson..... | St. Louis, Mo..... | Mar. 17, 1857. |
| 16858 | Rope or cordage, unmaking, machines for..... (See Class II, letter W.) | Joseph Wood..... | Brooklyn, N. Y..... | Mar. 17, 1857. |
| 18845 | Rope-wire, machinery for making.—(See Class II, letter W.) | James Hanley..... | New York, N. Y..... | Dec. 15, 1757. |
| 16745 | Sewing and other machines, mechanical move- ment for. Sewing-machine..... | S. F. Pratt..... | Roxbury, Mass..... | Mar. 3, 1857. |

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| 17186 | Sewing-machines..... | Bryan Atwater..... | Berlin, Conn..... | May 6, 1857. |
| 17930 | Sewing-machines..... | Abiel C. Herron..... | Remsen, N. Y..... | Aug. 4, 1857. |
| 16382 | Sewing-machines..... | Milton Finkle..... | New York, N. Y..... | Jan. 13, 1857. |
| 16397 | Sewing-machines..... | A. F. Johnson..... | Boston, Mass..... | Jan. 13, 1857. |
| 16434 | Sewing-machines..... | James E. A. Gibbs..... | Mill Point, Va..... | Jan. 20, 1857. |
| 16436 | Sewing-machines..... | Elias Howe, Jr..... | Brooklyn, N. Y..... | Jan. 20, 1857; Eng- land July 26, 1848. |
| 16566 | Sewing-machines..... | Joshua Gray, assignor to Joshua Gray and John Gault..... | Boston, Mass..... | Feb. 3, 1857. |
| 16554 | Sewing-machines..... | Samuel F. Pratt..... | Roxbury, Mass..... | Feb. 3, 1857. |
| 16518 | Sewing-machines..... | Eliza Alexander..... | New York, N. Y..... | Feb. 3, 1857. |
| 16609 | Sewing-machines..... | Thomas J. W. Robertson..... | New York, N. Y..... | Feb. 10, 1857. |
| 16713 | Sewing-machines..... | Joseph W. Burnham..... | Hartford, Conn..... | Mar. 3, 1857. |
| 16710 | Sewing-machines..... | Charles D. Belcher..... | Charleston, S. C..... | Mar. 3, 1857. |
| 16850 | Sewing-machines..... | T. J. W. Robertson..... | New York, N. Y..... | Mar. 17, 1857. |
| 16914 | Sewing-machines..... | James E. A. Gibbs..... | Mill Point, Va..... | Mar. 31, 1857. |
| 17049 | Sewing-machines..... | Willford H. Nettleton and Charles Ray- mond, assignors to Henry E. Fickett..... | Bristol, Conn..... | April 14, 1857. |
| 17366 | Sewing-machines..... | Solomon B. Ellitbory..... | New York, N. Y..... | May 26, 1857. |
| 17400 | Sewing-machines..... | Thomas S. Wells..... | Utica, N. Y..... | May 26, 1857. |
| 17427 | Sewing-machines..... | James E. A. Gibbs..... | Mill Point, Va..... | June 2, 1857. |
| 17508 | Sewing-machines..... | Daniel Harris..... | Boston, Mass..... | June 9, 1857. |
| 17571 | Sewing-machines..... | Daniel Harris..... | Boston, Mass..... | June 16, 1857. |
| 17717 | Sewing-machines..... | William Sage, assignor to Henry Sage..... | Durham Cent's, Conn..... | June 30, 1857. |
| 17679 | Sewing-machines..... | E. Howe, Jr., and W. B. Bliss..... | Boston, Mass..... | June 30, 1857. |
| 17744 | Sewing-machines..... | E. T. Lathbury..... | Buffalo, N. Y..... | July 7, 1857. |
| 18000 | Sewing-machines..... | W. C. Watson, assignor to himself, G. H. Wooster, and J. W. Gregory..... | New York, N. Y..... | Aug. 11, 1857. |
| 18071 | Sewing-machines..... | Henry Babin, assignor to himself and Tho- mas Sewell..... | New York, N. Y..... | Aug. 25, 1857.----- |
| 18068 | Sewing-machines, (A.)..... | William Wickersham..... | Boston, Mass..... | Aug. 25, 1857; Eng- land, Dec. 29, 1854. |
| 18069 | Sewing-machines, (B)..... | William Wickersham..... | Boston, Mass..... | Aug. 25, 1857; Eng- land, Dec. 29, 1854. |
| 18072 | Sewing-machines..... | Samuel Larkin, assignor to the Wheeler & Wilson Manufacturing Co..... | Bridgeport, Conn..... | Aug. 25, 1857. |
| 18102 | Sewing-machines..... | Orson C. Phelps..... | Rochester, N. Y..... | Sept. 1, 1857. |
| 18265 | Sewing-machines..... | Edward A. Jenks and John Underwood..... | Lowell, Mass..... | Sept. 29, 1857. |

III.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|-------------------------|-----------------|
| 18371 | Sewing-machines..... | William C. Watson, assignor to himself, George H. Wooster, and Ira W. Gregory. | New York..... | Oct. 6, 1857. |
| 18350 | Sewing-machines..... | W. H. Nettleton and Charles Raymond. | Bristol, Conn..... | Oct. 6, 1857. |
| 18359 | Sewing-machines..... | E. Harry Smith..... | New York, N. Y..... | Oct. 6, 1857. |
| 18470 | Sewing-machines..... | T. J. W. Robertson..... | New York, N. Y..... | Oct. 20, 1857. |
| 18511 | Sewing-machines..... | John W. Marsh..... | Oxford, Mass..... | Oct. 27, 1857. |
| 18522 | Sewing-machines..... | S. H. Roper..... | Roxbury, Mass..... | Oct. 27, 1857. |
| 18566 | Sewing-machines..... | C. H. Andrus, assignor to Squire Lee..... | Goshen, N. Y..... | Nov. 3, 1857. |
| 18605 | Sewing-machines..... | E. Harry Smith..... | New York, N. Y..... | Nov. 10, 1857. |
| 18639 | Sewing-machines..... | N. W. Harrington..... | Jamestown, N. Y..... | Nov. 17, 1857. |
| 18732 | Sewing-machines..... | Joel Chase..... | New York, N. Y..... | Dec. 1, 1857. |
| 18798 | Sewing-machines..... | George Fetter, assignor to himself and Edward Jones..... | Philadelphia, Pa..... | Dec. 1, 1857. |
| 18817 | Sewing-machines..... | William H. Laselle..... | New York, N. Y..... | Dec. 8, 1857. |
| 18834 | Sewing-machines..... | W. C. Watson, assignor to himself and George H. Wooster..... | New York, N. Y..... | Dec. 8, 1857. |
| 18823 | Sewing-machines..... | Charles Moore..... | Buffalo, N. Y..... | Dec. 8, 1857. |
| 18880 | Sewing-machines..... | Henry Behn, assignor to himself and Thos. Sewell..... | New York, N. Y..... | Dec. 15, 1857. |
| 18915 | Sewing-machines..... | William H. Laselle..... | New York, N. Y..... | Dec. 22, 1857. |
| 18904 | Sewing-machines..... | George W. Hubbard..... | West Meriden, Conn..... | Dec. 22, 1857. |
| 17825 | Sewing-machines, feed-motion for..... | A. B. M. Bartholf..... | New York, N. Y..... | July 21, 1857. |
| 16129 | Sewing-machines, guides for..... | William B. Bishop..... | Brooklyn, N. Y..... | Jan. 20, 1857. |
| 16586 | Sewing-machines, guides for..... | Addison Hull..... | Brooklyn, N. Y..... | Feb. 10, 1857. |
| 17265 | Sewing-machines, stitch for..... | Charles F. Bosworth..... | Peterham, Mass..... | May 12, 1857. |
| 17835 | Sewing-machines, tension apparatus for..... | A. Hoagland..... | Jersey City, N. J..... | July 21, 1857. |
| 17212 | Sewing, needles for..... | Benjamin Garvey..... | New York, N. Y..... | May 12, 1857. |
| 18807 | Sewing-thimbles..... | John Devlin..... | Philadelphia, Pa..... | Dec. 8, 1857. |
| 17334 | Sewing-thread, warps and yarns, machinery for dressing..... | J. D. Minder..... | Killingly, Conn..... | May 19, 1857. |
| 16734 | Shuttles, weavers'..... | Lucius J. Knowles..... | Warren, Mass..... | Mar. 3, 1857. |
| 16463 | Speeders..... | James S. Brown..... | Pawtucket, Mass..... | Jan. 27, 1857. |

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| 18629 | Spinning flax and hemp, machinery for..... | Milton D. Whipple, assignor to Alfred B. Ely. | Charlestown, Mass..... | Oct. 27, 1857. |
| 16657 | Spinning-flyers, manufacturing..... | John N. Sawtell..... | Lowell, Mass..... | Feb. 17, 1857. |
| 18029 | Spinning, self-acting mules for..... | George Wright..... | Grafton, Mass..... | Aug. 18, 1857. |
| 18081 | Thread, spooling, machines for..... | Charles K. Bradford..... | Lynn, Mass..... | Sept. 1, 1857. |
| 18391 | Twine-reels..... | S. E. Davis..... | Waterbury, Conn..... | Oct. 13, 1857. |
| 17177 | Wadding, winding, machines for..... | Thomas Thompson..... | Niverville, N. Y..... | April 28, 1857. |
| 18620 | Warps, dressing, machinery for..... | Samuel Campbell, assignor to John C. Whitin. | Whitestown, N. Y..... | Nov. 10, 1857. |
| 16623 | Wool-cleaning machines..... | William H. Watrous..... | Brooklyn, N. Y..... | Feb. 10, 1857. |
| 16864 | Wool-combing, machinery for..... | Michael H. Simpson..... | Boston, Mass..... | Mar. 17, 1857; ante-dated Sept. 17, 1856. |
| 17244 | Wool-combing, machines for..... | Cullen Whipple..... | Providence, R. I..... | May 5, 1857. |
| 18664 | Wool on the pelt, burring, machinery for..... | John Waterhouse..... | Little Falls, N. Y..... | Nov. 3, 1857. |
| 16934 | Yarn for dyeing and scouring, preparing..... | Lucien E. Pratt..... | South Kingston, R. I..... | Mar. 31, 1857. |
| 17379 | Yarn or thread, reels for..... | Christian Knauer..... | Pittsburgh, Pa..... | May 26, 1857. |
| 18461 | Yarns, cotton, manufacture of..... | Samuel C. Lister and James Warburton.. | Bradford, England..... | Oct. 20, 1857; England, Nov. 23, 1856. |
| 16903 | Yarns, manufacturing, from mixed cotton and wool. Yarns, paper, &c., sizing compositions for. (See Class IV, letter C.) | George S. Bradford..... | Sand Lake, N. Y..... | Mar. 31, 1857. |

CLASS IV.—CHEMICAL PROCESSES, MANUFACTURES, AND COMPOUNDS, including medicines, dyeing, color-making, distilling, soap and candle making, mortars, cements, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---------------------------------------|------------------------|---------------------------------------|
| 16879 | Acid, nitric, apparatus for making..... | Philip O'Reilly..... | Providence, R. I..... | Mar. 24, 1857. |
| 17830 | Acid sulphate of lime, apparatus for making..... | Laurent Gamotts and Sabin Martin..... | New Orleans, La..... | July 21, 1857. |
| 17976 | Acid, sulphuric, manufacture of..... | Alfred Monnier..... | Camden, N. J..... | Aug. 11, 1857; reissued Oct. 6, 1857. |
| 18214 | Alkalies, boxes for preserving..... | George Thompson..... | East Tarentum, Pa..... | Sept. 15, 1857. |

IV.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|--------------------------|--|
| 16771 | Alloys, fluxes for testing | E. Mourier and T. F. E. Vallent, assignors to Henry Migeon | Paris, France. | Mar. 3, 1857; France, Dec. 30, 1854. |
| 16201 | Breweries, coolers for | A. Hammer | New York, N. Y. | Sept. 16, 1857. |
| 17368 | Brewers' boilers | Adolph Hammer | Reading, Pa. | Aug. 11, 1857. |
| 18220 | Brewers' coolers | Adam Wood | Pittsburg, Pa. | Sept. 16, 1857. |
| 18338 | Bronzing-liquid | Henry Hoffman | New York, N. Y. | Oct. 6, 1857. |
| 17713 | Cane-juice, defecating | Leonard Wray | London, England | June 30, 1857; Belgium, June 20, 1854. |
| 18331 | Candle-making, preparing fats for | Morgan W. Brown | Buffalo, N. Y. | Oct. 13, 1857. |
| 16754 | Candle-mould machines | Benjamin D. Sanders | Holliday's Cove, Va. | Mar. 3, 1857. |
| 18281 | Coasting hose-pipe | Charles H. Hinckley | Stonington, Conn. | Sept. 29, 1857. |
| 17708 | Coloring yarn in the bobbin | James Thompson and William P. Wakelee | New Hartford, N. Y. | June 30, 1857. |
| 16918 | Composition for floor-cloths. Composition for preparing tracing-muslin. (See Class XVIII, letter T.) | J. W. Harmon | Brooklyn, N. Y. | Mar. 31, 1857. |
| 18270 | Compositions for covering meats | John J. Bate and Francis S. Low | Brooklyn, N. Y. | Sept. 29, 1857. |
| 16709 | Compositions for shuttle-drivers. Compositions, mastic roofing. (See Class IX, letter R.) | Samuel Boorn | Lowell, Mass. | Mar. 3, 1857. |
| 18199 | Compositions, safety-fuse | Edwin Gomes and William Mills | New York, N. Y. | Sept. 15, 1857. |
| 17381 | Compositions, sizing, for yarns, paper, &c. | John Leigh | Manchester, England | May 26, 1857. |
| 17867 | Compositions, tanning | Ira Carle | Kingston, Pa. | July 26, 1857. |
| 17562 | Compound, depilating, for hides | A. K. Eaton | New York, N. Y. | June 16, 1857. |
| 17392 | Compound, fertilizing | Louis S. Robbins | Brooklyn, N. Y. | May 26, 1857. |
| 17709 | Compounds, resinous, for covering hams | C. Van Vleet | Macomb, Ill. | June 30, 1857. |
| 17586 | Condensing-apparatus for salt and gases | John C. Fr. Salomon | Baltimore, Md. | June 16, 1857. |
| 17711 | Condensing liquids in gas main-pipes | John Walton | Louisville, Ky. | June 30, 1857. |
| 18286 | Cork-sole stuff | William Johnston | Brooklyn, (E. D.,) N. Y. | Sept. 29, 1857. |
| 18980 | Cotton, plastic, preparing, for moulding purposes. | James M. Legare | Aiken, S. C. | Dec. 29, 1857. |
| 17974 | Dyeing-machines, silk | Nicholas Mary, sen. | Philadelphia, Pa. | Aug. 11, 1857. |
| 17635 | Enamelling iron pipes and hollow-ware | Edward Pierce | Philadelphia, Pa. | June 23, 1857. |

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| 17548 | Evaporators, brine..... | Charles W. Atkeson | Henderson, Ky. | June 16, 1857. |
| 18216 | Gas apparatus, illuminating..... | Charles R. Warring | Poughkeepsie, N. Y. | Sept. 16, 1857. |
| 16544 | Gas generating apparatus..... | James Hansor..... | Wandsworth road, England | Feb. 8, 1857; Eng- land, Mar. 31, 1854. |
| 16830 | Gas-generator..... | Alonso M. Gilles | Boston, Mass. | Mar. 17, 1857. |
| 17309 | Gas-generators | James A. Bruce, assignor to President and Directors of Maryland Portable Gas Co. E. M. Whitehead and J. L. Conklin | Baltimore, Md. | May 12, 1857. |
| 17599 | Gas-generators | N. Aubin | Newark, N. J. | June 16, 1857. |
| 17614 | Gas-generators | John W. Smith..... | Albany, N. Y. | June 28, 1857. |
| 17704 | Gas-generators | Allen Pollock | Washington, D. C. | June 30, 1857. |
| 17981 | Gas-generators | John Butler | Washington, D. C. | Aug. 11, 1857. |
| 18184 | Gas-generators | Salmon Skinner | Brooklyn, N. Y. | Sept. 15, 1857. |
| 18414 | Gas-generators | Augustus A. Hayus | Yonkers, N. Y. | Oct. 18, 1857. |
| 17574 | Gas-generators, construction of | C. B. Loveless | Boston, Mass. | June 16, 1857. |
| 17435 | Gas-generators, feeding | Warren A. Simonds | Syracuse, N. Y. | June 2, 1857. |
| 18109 | Gas-generators, portable..... | Charles F. Werner | Boston, Mass. | Sept. 1, 1857. |
| 17465 | Gas-generators, wood | Warren C. Choate, and Charles N. Tyler | New York, N. Y. | June 2, 1857. |
| 16682 | Gas, hydrogen and wood, combining | James O. Halsey..... | Washington, D. C. | Feb. 24, 1857. |
| 17090 | Gas, illuminating, portable apparatus for gene- rating..... | James Hansor..... | Essex county, N. J. | April 21, 1857. |
| 16591 | Gas-making process..... | Thomas I. Pitt | Wandsworth road, England | Feb. 10, 1857; Eng- land, April 21, 1856. |
| 18648 | Gas-meter indicator..... | Hyam Jacob Hyams..... | New York, N. Y. | Nov. 17, 1857. |
| 16922 | Gas-meters, dry..... | O. L. Lawson, and A. A. Starr | Stanhope street, Hamp- stead road, England. | Mar. 31, 1857; Eng- land, Feb. 16, 1856. |
| 17936 | Gas-regulator, stop-cock | John H. Cooper | New York, N. Y. | Aug. 4, 1857. |
| 16639 | Gas-regulators | C. J. Halstead, and J. Coeyman, assignors to Decker, Godine, and Halstead. | Philadelphia, Pa. | Feb. 17, 1857. |
| 16951 | Gas-regulators | Robert Cornelius | New York, N. Y. | Mar. 31, 1857. |
| 17079 | Gas-regulators | Robert Cornelius | Philadelphia, Pa. | April 21, 1857. |
| 17317 | Gas-regulators | John H. Cooper | Philadelphia, Pa. | May 19, 1857. |
| 17671 | Gas-regulators | John H. Cooper | Philadelphia, Pa. | June 30, 1857. |
| 18008 | Gas regulators | John P. Powers | Philadelphia, Pa. | Aug. 16, 1857. |
| 18103 | Gas-regulators | Michael J. Miller | Newark, N. J. | Sept. 1, 1857. |
| 16651 | Gas-retort | Saunders Coates | St. Louis, Mo. | Feb. 17, 1857. |
| 18134 | Gas-retorts | Abel Povey | New York, N. Y. | Sept. 8, 1857. |
| 18926 | Gas-retorts, casting..... | Simmons W. Carpenter, assignor to Wm. W. Woodworth..... | Lowell, Mass. | Dec. 22, 1857. |
| 18791 | Gas-retorts, cleansing..... | W. Woodworth..... | Yonkers, N. Y. | Dec. 1, 1857. |

IV.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of Patent. |
|-------|--|--|------------------------|---|
| 17068 | Gas-retorta, closing | N. Anbln | Albany, N. Y. | April 21, 1857. |
| 18154 | Gas-tubes, extension | Charles Monson | New Haven, Conn. | Sept. 8, 1857. |
| 17214 | Gutta-percha, process for purifying | Robert Haering | New York, N. Y. | May 6, 1857. |
| 17649 | India-rubber cloth, elastic, preparing | Charles Winslow | Lynn, Mass. | June 23, 1857. |
| 16601 | India-rubber cloth, preparing | G. B. Miller | Colchester, Conn. | Feb. 10, 1857. |
| 17295 | India-rubber, devulcanizing | Conrad Poppenhusen, and Ludwig Held | Brooklyn, N. Y. | May 12, 1857; ante-dated April 1, 1857. |
| 17029 | India-rubber hose, machinery for manufacturing | T. B. DeForest | Birmingham, Conn. | April 14, 1857. |
| 17037 | India-rubber, &c., vulcanizing | Robert Haering | New York, N. Y. | April 14, 1857. |
| 17931 | Ivory, factitious | Ludwig Held | Brooklyn, N. Y. | Aug. 4, 1857. |
| 17949 | Ivory, factitious | William M. Welling | New York, N. Y. | Aug. 4, 1857. |
| 17519 | Lampblack, making | Julius A. Roth | Philadelphia, Pa. | June 9, 1857. |
| 18271 | Lard-rendering kettles | John J. Bate | Brooklyn, N. Y. | Sept. 29, 1857. |
| 18322 | Lard-rendering kettles | Allen Lapham, assignor to himself and Joseph B. Bennett. | Brooklyn, N. Y. | Nov. 10, 1857. |
| 16766 | Liquors, aging, devices for. | A. & A. S. Wolcott. | East Bloomfield, N. Y. | Mar. 3, 1857. |
| 17984 | Lubricator. (See Class XII.) | Jesse Shilling | Troy, Ohio | Aug. 11, 1857. |
| 18160 | Mash-cooling machines | William Reising | Astoria, N. Y. | Sept. 8, 1857. |
| 18279 | Mixtures, wash, for woollens, &c | Joseph W. Harmon | Elizabethtown, N. J. | Sept. 29, 1857. |
| 17181 | Oila, factitious | Halvor Halvorson, assignor to himself, E. H. Baker, J. F. Athearu, & W. T. Eustis. | Cambridge, Mass. | April 29, 1857. |
| 19006 | Pain-compound | John M. Merryman, assignor to J. M. Merryman and J. H. Jordan. | Logansport, Indiana | Dec. 29, 1857. |
| 18183 | Paint, india-rubber | William & William A. Butcher | Philadelphia, Pa. | Sept. 15, 1857. |
| 18794 | Paint-vehicle | Isaac Gattman, assignor to himself, and J. & D. E. Breinig. | Philadelphia, Pa. | Dec. 1, 1857. |
| 18338 | Paints, oil, mixing and grinding, apparatus for. | William H. Dolson | New York, N. Y. | Nov. 3, 1857. |
| 17865 | Pill-machines | James C. Ayer | Lowell, Mass. | July 28, 1857. |
| 17291 | Powder, blasting | Antoine Martineddu | Marseilles, France | May 12, 1857. |
| 16680 | Powder, gun. | Elisba B. Dodson | Reading, Pa. | Feb. 10, 1857. |
| 18724 | Preparing glue-stock | Obadiah Rich, assignor to Peter Cooper | Cambridge, Mass. | Nov. 24, 1857. |

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|-------|--|--|----------------------------|-----------------|
| 17610 | Preparing liquid rose-pink | John W. Perry, assignor to Jas. W. Gates.. | Boston, Mass | June 16, 1857. |
| | Preparing paper-pulp from beet and other re- fusa. (See Class III, letter P.) | | | |
| 16480 | Process for making illuminating-gas | Robert Grant | Brooklyn, N. Y | Jan. 27, 1857. |
| 18409 | Process of coating iron | E. G. Pomeroy | Philadelphia, Pa | Oct. 13, 1857. |
| 18244 | Process of making white lead | Henry Hannen | Dubuque, Iowa | Sept. 22, 1857. |
| 17337 | Process of preparing green sand marl as a fer- tilizer of lands | Charles Stearns | New York, N. Y | May 5, 1857. |
| 16594 | Process of smelting zinc-iron ore | Joseph C. Kent | Cooper Iron Works, N. J .. | Feb. 10, 1857. |
| 17279 | Process of treating raw cotton | Julius C. Hurd | Medway, Mass | May 12, 1857. |
| 16882 | Processes for preparing fertilizers | L. Reid | Barren Island, N. Y | Mar. 24, 1857. |
| 16362 | Processes for reducing zinc ore | Samuel Wetherill | Bethlehem, Pa | Jan. 6, 1857. |
| 16961 | Processes for treating moss for mattresses | Samuel Barker | New York, N. Y | April 7, 1857. |
| 17011 | Retort, construction of a | Alfred Monnier, assignor to himself, and Isaac Gattman | Camden, N. J | April 7, 1857. |
| 17864 | Retort-covers | James R. Floyd, assignor to Theodore C. Kibbe | New York, N. Y | July 21, 1857. |
| 18172 | Saccharine evaporators | Joseph Bour, assignor to Chas. Parlange .. | Forbach, France | Sept. 8, 1857. |
| 18830 | Salt-pans, construction of | William S. Worthington | Newtown, N. Y | Dec. 8, 1857. |
| 16706 | Silicates, alkaline, preparing | John M. Ordway, to Roxbury Color Chemi- cal Manufactory | Roxbury, Mass | Feb. 24, 1857. |
| 17955 | Skins and furs tanning and coloring | Harmon Hibbard | Henrietta, N. Y | Aug. 4, 1857. |
| 16750 | Soap-mixture | Isaac Rumbach | Shreveport, La | Mar. 3, 1857. |
| 17930 | Soap-substitute for scouring woollens | Louis Wilman | Worcester, Mass | May 12, 1857. |
| 17710 | Starch from maize | William Watt | Belfast, Ireland | June 30, 1857. |
| 18094 | Stills, spirit | Edward Herring | Walton on Thames, England | Sept. 1, 1857. |
| 17933 | Sugar-boilers | Peter Holbrook | Whittingham, Va | Aug. 4, 1857. |
| 18315 | Sugar-houses, drip-pots for | John Turl | New York, N. Y | Sept. 15, 1857. |
| 17409 | Sugar-moulds, tips for | John Turl, assignor to Samuel Turl | New York, N. Y | May 26, 1857. |
| 17021 | Sugar, preparation of, called "table-manna" .. | Mesano Butterfield | Indianapolis, Ind | April 14, 1857. |
| 18030 | Tanning-liquids | L. L. A. Elise de la Perouse, assignor to M. J. A. Guet | Paris, France | Aug. 18, 1857. |
| 18203 | Treating cotton and linen waste | E. N. Horsford | Cambridge, Mass | Sept. 15, 1857. |
| 17448 | Vapors and gases, apparatus for condensing, and for evaporating liquids | August F. W. Paris | New York, N. Y | June 2, 1857. |
| 18133 | Verdigris, processes for manufacturing | Ludwig Brumlen | Hoboken, N. J | Sept. 8, 1857. |

CLASS V.—CALORIFICS, comprising lamps, fire-places, stoves, grates, furnaces for heating buildings, cooling-apparatus, preparation of fuel, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-----------------------------|-----------------|
| | Blast, air, method of generating. (See Class XI, letter A.) | | | |
| 17727 | Blow-pipe, alcohol..... | Edward Conway..... | Dayton, Ohio..... | July 7, 1857. |
| 18693 | Boilers for heating buildings..... | A. E. Hitchings..... | New York, N. Y..... | Nov. 24, 1857. |
| 18465 | Burner, air and vapor..... | Oscar F. Morrill..... | Boston, Mass..... | Oct. 20, 1857. |
| 17822 | Burners, vapor..... | Horatio Fairbanks..... | South Brookfield, Mass..... | June 23, 1857. |
| 17916 | Burners, vapor..... | D. H. Carpenter..... | Wallingford, Conn..... | Aug. 4, 1857. |
| 17640 | Candlesticks..... | Timothy Rose..... | Cortlandville, N. Y..... | June 23, 1857. |
| 18006 | Candlesticks..... | James Spratt..... | Cincinnati, Ohio..... | Nov. 10, 1857. |
| 18100 | Chimney-caps..... | Ira Maybaw..... | Albion, Mich..... | Sept. 1, 1857. |
| 16644 | Chimney-cowl..... | Moses H. Hale and Samuel Horton..... | Newburyport, Mass..... | Feb. 17, 1857. |
| 17077 | Chimney-dampers..... | Augustine Campbell..... | Philadelphia, Pa..... | April 21, 1857. |
| 18501 | Coal-breaking, machines for..... | John B. Deihm and Jasper Snell..... | Pottsville, Pa..... | Oct. 27, 1857. |
| 17294 | Coal-cracker..... | Townsend Poore..... | Carbondale, Pa..... | May 12, 1857. |
| 18380 | Coal, separating slate and other foreign substances from, machine for..... | E. Borda and David Glover..... | Woodside, Pa..... | Oct. 13, 1857. |
| 18082 | Coal-sifters..... | William D. Brown..... | Weymouth, Mass..... | Sept. 1, 1857. |
| 18125 | Coal-sifters..... | Sanford Adams..... | Boston, Mass..... | Sept. 8, 1857. |
| 18439 | Coal-sifters..... | Samuel Booth..... | New York, N. Y..... | Oct. 20, 1857. |
| 18687 | Coal, slating, machines for..... | Jacob Gass, assignor to himself and George Mowton..... | Trevorton, Pa..... | Nov. 24, 1857. |
| 17018 | Cooler for wine, beer, and other liquids in barrels..... | John F. Burgin..... | Northumberland, Pa..... | April 14, 1857. |
| 18885 | Dampers, grate..... | John O'Brien, assignor to Owen Collins and John Dunley..... | New York, N. Y..... | Dec. 15, 1857. |
| 16905 | Drying-cylinders, steam..... | John Booth..... | Pawtucket, R. I..... | Mar. 31, 1857. |
| | Drying grain, &c., machine for. (See Class XIII, letter G.) | | | |
| 16329 | Fire-hook..... | John G. Ernst..... | Harrisburg, Pa..... | Jan. 6, 1857. |
| 16768 | Fire-places and grates, back-plates for..... | Fountain E. Pitta..... | Nashville, Tenn..... | Mar. 3, 1857. |
| 18920 | Fuel, artificial..... | Eugene Miannay..... | New York, N. Y..... | Dec. 22, 1857. |

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|-------|--|---|----------------------------|-----------------|
| 18729 | Fuel, composition | Elizabeth Bellinger | Mohawk, N. Y. | Dec. 1, 1857. |
| 18432 | Furnaces | John Case and Isaac Bonies | Amsterdam, N. Y. | Oct. 20, 1857. |
| 18491 | Furnaces | Thomas and John Aldridge | Hudson, N. J. | Oct. 27, 1857. |
| 18951 | Furnaces | Benjamin F. Blood | Port Jackson, N. Y. | Dec. 29, 1857. |
| 18348 | Furnaces, air-heating | Joseph D. Green and Edward Ivers, as- signors to Joseph D. Greene. | Philadelphia, Pa. | Jan. 6, 1857. |
| 17842 | Furnaces, bagasse | George M. Longacre | New Orleans, La. | July 21, 1857. |
| 18874 | Furnaces, bagasse | Moses Thompson | New York, N. Y. | Dec. 15, 1857. |
| 17039 | Furnaces, feeding fuel to, apparatus for .. | James Homington | Richmond, Ind. | April 14, 1857. |
| 18010 | Furnaces, glass bars of | Edward Dugdale | Burlington, N. J. | Aug. 18, 1857. |
| 17022 | Furnaces, hot-air | John H. Cahill | Philadelphia, Pa. | April 14, 1857. |
| 18002 | Furnaces, hot-air | Daniel P. Weeks, assignor to himself and Eben Seavey. | Boston, Mass. | Aug. 11, 1857. |
| 18064 | Furnaces, hot-air, water-vessels for imparting humidity to, and vapor-draft to the grate bars of | William Moultrie | New York, N. Y. | Aug. 25, 1857. |
| 17791 | Furnaces, iron, use of coal-tar in | Isaac G. Johnson | Spaytan Dayvel, N. Y. | July 14, 1857. |
| 18883 | Furnaces, locomotive | George S. Griggs, assignor to himself and William A. Bullard. | Roxbury, Mass. | Dec. 15, 1857. |
| 17132 | Gas-burner, argand | Charles H. Johnson, assignor to C. H. Johnson and J. G. Hamblin. | Boston, Mass. | April 21, 1857. |
| 17035 | Gas-burners | E. P. Gleason | Providence, R. I. | April 14, 1857. |
| 17530 | Gas-burners | John C. Walsh | Lockport, N. Y. | June 9, 1857. |
| 17674 | Gas-burners | Ass B. Gates | Binghamton, N. Y. | June 30, 1857. |
| 18230 | Gas-burners | W. W. Batchelder | New York, N. Y. | Sept. 22, 1857. |
| 18289 | Gas-burners | William H. Lindsey | Brooklyn, N. Y. | Sept. 29, 1857. |
| 18648 | Gas-burners, construction of | John McHenry | Cincinnati, Ohio. | Mar. 17, 1857. |
| 16820 | Gas-burners, spigots of, device by which the, may be lubricated in their seats. | Charles H. Johnson, assignor to Charles H. Johnson and James G. Hamblin. | Boston, Mass. | Mar. 10, 1857. |
| 17251 | Gas, heating and cooking by, apparatus for .. | R. Snowden Andrews | Baltimore, Md. | May 12, 1857. |
| 18945 | Gas, mode of lighting, by electricity | Samuel Gardiner, jr. | New York, N. Y. | Dec. 22, 1857. |
| 17540 | Grates, fire, or linings of fire-pots | Daniel H. Dean, assignor to William T. Coggeshall. | Lowell, Mass. | June 9, 1857. |
| 17076 | Griddles. (See Class XVII.) | | | |
| 17076 | Heaters, cask | Simeon Burgess | Wayne, Pa. | April 21, 1857. |
| 18026 | Hot-air registers | Joseph V. Tibbetta | New York, N. Y. | Aug. 18, 1857. |
| 18356 | Hot-air registers | Sylvester J. Sherman | New York, N. Y. | Oct. 6, 1857. |
| 17989 | Kettle, tea | William Westlake | Milwaukee, Wis. | Aug. 11, 1857. |

V.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|-------|--|--|--|---|
| 16981 | Lamp-burners..... | A. H. Knapp..... | Medford, Mass..... | April 7, 1857. |
| 18307 | Lamp, hydro-carbon vapor..... | Isaac Suggitt..... | Providence, R. I..... | Sept. 29, 1857. |
| 18818 | Lamps..... | Francis Lecialr..... | New York, N. Y..... | Dec. 8, 1857. |
| 17086 | Lamps, burning-fluid, burners of..... | Charles A. Greene..... | Philadelphia, Pa..... | April 21, 1857. |
| 16398 | Lamps, burning-fluid, construction of..... | David F. Randall..... | Chicopee, Mass..... | Jan. 13, 1857. |
| 16893 | Lamps, fluid, burner of burning..... | Rufus W. Sargent..... | Philadelphia, Pa..... | Mar. 17, 1857. |
| 16379 | Lamps, fluid, burning..... | M. B. Dyott..... | Philadelphia, Pa..... | Jan. 13, 1857. |
| 17688 | Lamps, fountain..... | Henry W. Adams..... | New York, N. Y..... | June 30, 1857. |
| 16524 | Lamps, lard..... | J. S. Brown, assignor to Joseph Kent..... | Washington, D. C..... | Feb. 3, 1857. |
| 16825 | Lamps, lard..... | Isaac N. Coffin..... | Washington, D. C..... | Mar. 17, 1857. |
| 16384 | Lamps, locomotive..... | Lewis A. Hamblen..... | Chicago, Ill..... | Jan. 13, 1857. |
| 16769 | Lamps, locomotive and other, reflectors for..... | Isaac Carleton, assignor to John Wyberd..... | Brooklyn, N. Y..... | Mar. 3, 1857. |
| 18704 | Lamps, safety..... | William Pratt..... | Baltimore, Md..... | Nov. 24, 1857; ante-dated May 24, 1857. |
| 18456 | Lamps, shades for..... | William Kemble and..... William H. C. Bartlett..... | West Point, N. Y..... New York, N. Y..... | Oct. 20, 1857. |
| 17607 | Lamps, signal. (See Class VIII, letter S.)..... | Joseph Hassell..... | Brooklyn, N. Y..... | June 9, 1857. |
| 18142 | Lamps, solar..... | Joseph G. Gilbert..... | New York, N. Y..... | Sept. 8, 1857. |
| 18719 | Lamps, vapor-burning..... | D. H. Chamberlain, assignor to himself and John Borrowscale..... | West Roxbury, Mass..... | Nov. 24, 1857. |
| 17637 | Lantern for lighting street gas..... | John Reese and Charles N. Tyler..... | Washington, D. C..... | June 23, 1857. |
| 18602 | Lantern, signal..... | J. R. Pierce and L. B. Austin..... | Oswego, N. Y..... | Nov. 10, 1857. |
| 17351 | Lantern and oil-can, combined..... | W. G. Russell, assignor to himself and William Sewell..... | New York, N. Y..... | May 19, 1857. |
| 18105 | Lanterns..... | Joseph H. Rohman..... | Philadelphia, Penn..... | Sept. 1, 1857. |
| 18784 | Lanterns, gas-lighting..... | Abel Wilson..... | Philadelphia, Penn..... | Dec. 1, 1857. |
| 16880 | Lanterns, pocket..... | Andrew Ralston..... | West Middletown, Penn..... | Mar. 24, 1857. |
| 17696 | Lanterns, street..... | John Reese and Charles N. Tyler..... | Washington, D. C..... | June 30, 1857. |
| 17495 | Ovens, bakers'..... | John Chilcott..... | Brooklyn, N. Y..... | June 9, 1857. |
| 18429 | Ovens, bakers'..... | Hiram Berdan..... | New York, N. Y..... | Oct. 20, 1857. |

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|-------|--|--|----------------------|-----------------|
| 17666 | Radiator for heating apartments, portable steam. | J. H. Chester | Cincinnati, Ohio | June 30, 1867. |
| 16459 | Radiators for fire-places, grates, and Franklin stoves. | William Bennett. | New York, N. Y. | Jan. 27, 1867. |
| 17456 | Ranges, cooking. | Charles J. Shepard. | Brooklyn, N. Y. | June 2, 1867. |
| 18066 | Ranges, cooking. | Samuel Pierce. | Troy, N. Y. | Aug. 25, 1867. |
| 17529 | Roasting meat, apparatus for. | John G. Brown and John P. Derby. | South Reading, Mass. | May 12, 1867. |
| 18441 | Steam heating apparatus. | Edmund Gibbs. | Madison, Wis. | Sept. 22, 1867. |
| 17760 | Stove, air-heating. | Charles B. Sawyer. | Fitchburg, Mass. | July 7, 1867. |
| 18321 | Stove-cover stands. | Hiram Carley. | Lynn, Mass. | Oct. 6, 1867. |
| 17767 | Stove, gas. | Patrick Mihan, assignor to himself and Robert B. Fitts. | Boston, Mass. | July 7, 1867. |
| 16538 | Stove grates, shaker-bars of. | G. W. Gardner. | Troy, N. Y. | Feb. 3, 1867. |
| 17766 | Stove, railroad car. | James Spear. | Philadelphia, Penn. | July 7, 1867. |
| 17483 | Stove, steam-heating. | Asa Blood. | Norfolk, Va. | June 9, 1867. |
| 16423 | Stove-thimbles or deck-irons. | Lofus Wood. | New York, N. Y. | Jan. 13, 1867. |
| 18434 | Stove and furnace grate. | W. T. Coggeshall. | Fall River, Mass. | Oct. 20, 1867. |
| 17235 | Stoves, close or open. | Henry Seitz. | St. Mary's, Va. | May 5, 1867. |
| 17283 | Stoves, coal. | John C. Keller. | Philadelphia, Penn. | May 12, 1867. |
| 17610 | Stoves, coal. | John B. Kohler. | Philadelphia, Penn. | June 9, 1867. |
| 17919 | Stoves, coal. | J. A. Davis. | Syracuse, N. Y. | Aug. 4, 1867. |
| 18362 | Stoves, coal. | W. H. Stinson. | Baltimore, Md. | Oct. 6, 1867. |
| 18469 | Stoves, coal. | D. Christian Raub. | Davenport, Iowa. | Oct. 20, 1867. |
| 16455 | Stoves, cooking. | John G. Jreadwell. | Albany, N. Y. | Jan. 20, 1867. |
| 17100 | Stoves, cooking. | Thomas King. | West Farms, N. Y. | April 21, 1867. |
| 17371 | Stoves, cooking. | Joseph Hackett. | Louisville, Ky. | May 26, 1867. |
| 17748 | Stoves, cooking. | William Besor. | Cincinnati, Ohio. | July 7, 1867. |
| 18012 | Stoves, cooking. | Sidney Godley. | Lockport, N. Y. | Aug. 18, 1867. |
| 18586 | Stoves, cooking. | James R. Hyde. | Troy, N. Y. | Nov. 10, 1867. |
| 18737 | Stoves, cooking. | R. D. (ranger). | Philadelphia, Penn. | Dec. 1, 1867. |
| 18369 | Stoves, cooking. | Samuel Pierce. | Troy, N. Y. | Dec. 16, 1867. |
| 18024 | Stoves, cooking, bakers for. | P. P. Stewart. | Troy, N. Y. | Aug. 18, 1867. |
| 18297 | Stoves, cooking, ranges, &c., apparatus for roasting on. | Samuel Pierce. | Troy, N. Y. | Sept. 29, 1867. |
| 16349 | Stoves, cooking, ship's. | Daniel S. Beardsley, assignor to himself and John D. Umberfield. | New Haven, Conn. | Jan. 6, 1867. |
| 17678 | Stoves, foot. | John W. Leferts. | Brooklyn, N. Y. | June 16, 1867. |
| 18580 | Stoves for burning tan, saw-dust, &c. | Samuel Fisher. | Canton, Mass. | Nov. 10, 1867. |
| 16939 | Stoves for railway cars. | George W. Thompson. | Bordentown, N. J. | Mar. 31, 1867. |

V.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|-------|--|---|--------------------|-----------------|
| 17608 | Stoves, gas | Patrick Mihan, assignor to himself and Robert B. Fitts. | Boston, Mass | June 16, 1857. |
| 17771 | Stoves, gas | Thomas Watters, assignor to himself and Stephen Sherlock. | Boston, Mass | July 7, 1857. |
| 16607 | Stoves, ventilating | Luther M. Parsons | Waukan, Wis | Feb. 10, 1857. |
| 18868 | Valve, safety, thermo-pneumatic. (See Class XI, letter V.) Warmer, feet | H. G. Seekins and H. G. Seekins, jr. | Elyria, Ohio | Dec. 15, 1857. |

CLASS VI.—STEAM AND GAS ENGINES, including boilers and furnaces therefor, and parts thereof.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|--------------------------|--|
| 17636 | Boiler furnaces, steam, safety apparatus for regulating. Boiler-heads, machine for bending flanges on. (See Class II, letter B.) Boilers, locomotive | William G. Pike and Isaac R. Scott | Waltham, Mass | June 23, 1857. |
| 17436 | Boilers, riveted, machine for | J. E. McConnell | Wolverton, England | June 2, 1857; Eng- land, Dec. 2, 1856; additional improve- ment Oct. 8, 1857. |
| 17661 | Boilers, steam | S. Bennett | New Orleans, La. | June 30, 1857. |
| 16693 | Boilers, steam | Jason J. Palmer | Fushing, N. Y. | Feb. 24, 1857. |
| 16969 | Boilers, steam | Smith Baldwin | St. Louis, Mo. | April 7, 1857. |
| 17042 | Boilers, steam | Nelson Johnson | Jasper, N. Y. | April 14, 1857. |
| 17648 | Boilers, steam | Harry Whitaker | Buffalo, N. Y. | June 23, 1857. |
| 17924 | Boilers, steam | Robert Ferguson | New Orleans, La. | Aug. 4, 1857. |

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|-------|---|--|---------------------------|---|
| 18376 | Boilers, steam..... | William M. & Jonas B. Ellis | Washington, D. C..... | Sept. 29, 1857. |
| 18467 | Boilers, steam..... | William George Norris | Philadelphia, Pa..... | Oct. 20, 1857. |
| 18832 | Boilers, steam..... | David Matthew..... | Philadelphia, Pa..... | Dec. 8, 1857. |
| 18875 | Boilers, steam..... | F. R. Walker..... | Tully, Mo..... | Dec. 15, 1857. |
| 18897 | Boilers, steam, arrangement of air-tubes in fire-boxes of..... | R. S. Griffith..... | Hackett, Pa..... | Dec. 23, 1857. |
| 17288 | Boilers, steam, boring fine sheets of, machine for..... | Sylvanus V. Lowe..... | Reading, Pa..... | May 12, 1857. |
| 16654 | Boilers, steam, damper-regulators for..... | William Webster..... | Morrisania, N. Y..... | Feb. 17, 1857. |
| 17583 | Boilers, steam, damper regulators for..... | Patrick White..... | Brooklyn, N. Y..... | June 9, 1857. |
| 16663 | Boilers, steam, feed-water apparatus to..... | Andrew J. Vandegrift..... | Delaware, Ohio..... | Feb. 17, 1857. |
| 16604 | Boilers, steam, gauges and water-regulators for..... | Migbill Nutting..... | Portland, Me..... | Feb. 10, 1857. |
| 17046 | Boilers, steam, to prevent incrustations in..... | Robert McCafferty..... | Lancaster, Pa..... | April 14, 1857. |
| 16596 | Boilers, steam, safety-indicators for..... | Lucius J. Knowles..... | Warren, Mass..... | Feb. 10, 1857. |
| 17473 | Boilers, steam, water-gauges for..... | Datus E. Rugg, assignor to himself and Dexter N. Force..... | New York, N. Y..... | June 2, 1857. |
| 18420 | Boilers, steam, water-gauges for..... | Edward Whitely..... | Boston, Mass..... | Oct. 13, 1857. |
| 18425 | Boilers, steam, water-indicators for..... | F. B. Fournier and D. Hinman, assignors to themselves and I. Munroe..... | Berea, Ohio..... | Oct. 13, 1857. |
| 18861 | Condensers, surface..... | Thomas Prosser..... | New York, N. Y..... | Dec. 15, 1857; England, Oct 31, 1854. |
| 18552 | Engine-cylinders, steam-lubricators for. (See Class XII, letter L.) Engine, steam, arrangement of feed-water pipe in the bed of a..... | Henry W. Bill..... | Cuyahoga Falls, Ohio..... | Nov. 3, 1857. |
| 18933 | Engines and pumps, oscillating, arrangement of..... | G. Sprengel and Thomas W. Bedford..... | Harrisonburg, Va..... | Dec. 22, 1857. |
| 17213 | Engines, locomotive..... | Horace Gray..... | Boston, Mass..... | May 5, 1857. |
| 18255 | Engines, rotary steam..... | D. C. Turner..... | Astoria, Wis..... | Sept. 23, 1857. |
| 18063 | Engines, rotary steam, packing of..... | Gerard Sickels..... | Brooklyn, N. Y..... | Aug. 25, 1857. |
| 16940 | Engines, shaping..... | Withrell & Morgan..... | Biddford, Me..... | Mar. 31, 1857. |
| 16781 | Engines, steam, cut-offs of..... | John F. Allen..... | New York, N. Y..... | Mar. 10, 1857. |
| 18919 | Engines, steam, feed-water attachments to..... | Lewis Martin..... | New York, N. Y..... | Dec. 23, 1857. |
| 18997 | Engines, steam, governor for..... | H. N. Throop..... | Pultneyville, N. Y..... | Dec. 29, 1857. |
| 17200 | Engines, steam, metal-packed pistons for..... | George W. Colton..... | St. Louis, Mo..... | May 6, 1857. |
| 18136 | Engines, steam, metallic packing for pistons of..... | George H. Corlies..... | Providence, R. I..... | Sept. 8, 1857. |
| 18255 | Engines, steam, metallic packing-rings for..... | Patrick Clark..... | Rahway, N. J..... | Sept. 22, 1857; additional improvement July 28, 1857. |
| 17903 | Engines, steam, oscillating..... | John Wallace..... | Pittsburg, Pa..... | July 28, 1857. |

VI.—*List of patents for inventions.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|----------------------|-----------------|
| 17422 | Engines, steam, packing-pistons and stuffing-boxes of. | Patrick Clark | Rahway, N. J. | June 2, 1857. |
| 17798 | Engines, steam, pistons for, setting out the packing of. | George H. Hoegland. | Port Jervis, N. Y. | July 14, 1857. |
| 16613 | Engines, steam, rotary | John B. Root | Buffalo, N. Y. | Feb. 10, 1857. |
| 18989 | Engines, steam, rotary | John B. Root | Youngstown, N. Y. | Dec. 29, 1857. |
| 17271 | Engines, steam, semi-rotative. | C. B. Callagher | Allegheny City, Pa. | May 12, 1857. |
| 16779 | Engines, steam, stop-motions for | John T. Achley | Philadelphia, Pa. | Mar. 10, 1857. |
| 17879 | Engines, &c., governor for | F. W. Howe | Newark, N. J. | July 28, 1857. |
| 17817 | Engines, &c., steam, governors of. | A. F. Ward | Louisville, Ky. | July 14, 1857. |
| 17623 | Engines, &c., steam, vane-governor for. | Francis Gustine | Medford, Mass. | June 23, 1857. |
| 18563 | Engines, &c., steam, vane-governor for. | Charles Whittier | Roxbury, Mass. | Nov. 8, 1857. |
| 17560 | Gauges, pressure | Joseph L. Eastman | Boston, Mass. | June 16, 1857. |
| 17988 | Gauges, steam | D. G. Wells | New York, N. Y. | Aug. 11, 1857. |
| 16428 | Gauges, steam-pressure | E. G. Allen, assignor to Henry O. Allen. | Boston, Mass. | Jan. 20, 1857. |
| 17607 | Gauges, steam-pressure | J. H. Miller and J. Kallay, assignors to themselves and John Deamer. | Canton, Ohio. | June 16, 1857. |
| 18272 | Gauges, steam-pressure | Henry Bates | New London, Conn. | Sept. 29, 1857. |
| 18226 | Gauges, steam-pressure | E. G. Allen, assignor to Henry O. Allen | Boston, Mass. | Oct. 27, 1857. |
| 18655 | Gauges, steam-pressure | John E. Wootton | Philadelphia, Pa. | Nov. 17, 1857. |
| 18129 | Gauges, steam-pressure, tubes for | E. H. Ashcroft | Boston, Mass. | Sept. 8, 1857. |
| 16458 | Gauges, steam and pressure | John Ashcroft and Thomas Mighten | New York, N. Y. | July 27, 1857. |
| 17947 | Governor for water, steam, and other power. | N. Scholfeld. | Norwich, Conn. | July 21, 1857. |
| 18578 | Locomotive-boilers, attaching steam-gauges to. | J. L. Eastman | Boston, Mass. | Nov. 10, 1857. |
| 13348 | Locomotive cow-catchers | James Mitchell | Oscola, Iowa. | Oct. 6, 1857. |
| 18966 | Locomotive engine-wheels | George S. Griggs | Roxbury, Mass. | Dec. 29, 1857. |
| 18712 | Locomotive engines, arrangement of cylinders and their connexions for. | Aaron Smethurst | Philadelphia, Pa. | Nov. 24, 1857. |
| 19000 | Locomotive engines for producing increased adhesion to the rails when required. | E. Windhausen | Duderstadt, Hanover. | Dec. 29, 1857. |
| | Locomotive furnaces. (See Class V, letter F.) | | | |

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|-------|--|---|-----------------------|-----------------|
| 17834 | Locomotives, coal-burning, arrangement of means for regulating the fire of. | John M. Hartnett..... | Waukegan, Ill..... | July 21, 1857. |
| 18953 | Locomotives, arrangement of deflecting plates and spark-receiver in. | William H. Bullock..... | Boston, Mass..... | Dec. 29, 1857. |
| 18786 | Locomotives, driving-box for..... | John E. Wootton..... | Philadelphia, Pa..... | Dec. 1, 1857. |
| 17215 | Locomotives, exhaust of, means for directing..... | Robert Hale..... | Roxbury, Mass..... | May 5, 1857. |
| 18373 | Locomotives, exhaust regulator for..... | Edward R. Addison..... | Baltimore, Md..... | Oct. 13, 1857. |
| 17268 | Locomotives, heating feed-water apparatus of..... | Peter S. Ebbert..... | Chicago, Ill..... | May 5, 1857. |
| 18315 | Locomotives, tank for..... | John Kimball, assignor to Robert Hale..... | Concord, N. H..... | Sept. 29, 1857. |
| 17913 | Locomotives, trucks for..... | Levi Bissell..... | New York, N. Y..... | Aug. 4, 1857. |
| 18304 | Locomotives, &c., window for..... | Henry Skinner..... | Fulton, N. Y..... | Sept. 29, 1857. |
| 17859 | Spark-arresters..... | John F. Page, assignor to himself and James Landy..... | Philadelphia, Pa..... | July 21, 1857. |
| 17884 | Spark-arresters..... | Ethelred May..... | Boston, Mass..... | July 28, 1857. |
| 17875 | Spark-arresters..... | Henry H. Graham..... | Patterson, N. J..... | July 28, 1857. |
| 18613 | Steam, anhydrous, generating..... | William M. Storm..... | New York, N. Y..... | Nov. 10, 1857. |
| 17372 | Steam-boiling apparatus..... | Adolph Hammer..... | Reading, Pa..... | May 26, 1857. |
| | Steam-carriages, steering apparatus of. (See Class X, letter C.) | | | |
| 17142 | Steam cylinders, arrangement of ports in..... | Bowen Eaton..... | Roanoke, Ind..... | April 28, 1857. |
| 18747 | Steam, generating..... | Charles F. Pond..... | Hartford, Conn..... | Mar. 3, 1857. |
| 18319 | Steam-generators..... | Julien F. Belleville, assignor to Robert Murphy..... | Nancy, France..... | Oct. 6, 1857. |
| 18460 | Steam-generators..... | A. R. Letta..... | Cincinnati, Ohio..... | Oct. 20, 1857. |
| 17675 | Steam, oily particles held in suspension by, apparatus for separating the..... | Robert Hale..... | Roxbury, Mass..... | June 30, 1857. |
| 17683 | Steam-pistons, metallic packing for..... | Daniel Leasher..... | Brooklyn, N. Y..... | June 30, 1857. |
| 18048 | Steam-pressure regulator..... | L. J. Knowles..... | Warren, Mass..... | Aug. 25, 1857. |
| | Steam-pumping apparatus. (See Class XI, letter P.) | | | |
| 17855 | Steam-tight, means for rendering joints..... | William S. Gale, assignor to Peter Poillon..... | New York, N. Y..... | July 21, 1857. |
| 17069 | Steam-traps for relieving steam-pipes of water..... | John Avery, Jr..... | Lowell, Mass..... | April 21, 1857. |
| 17656 | Steam-whistles..... | Sylvester W. Warren, assignor to himself and Dexter N. Force..... | Brooklyn, N. Y..... | June 23, 1857. |
| 18641 | Steamers pilots' bells on, mechanism for operating..... | J. R. Hopkins, assignor to himself and Gustavus F. Sargent..... | Lincoln, Me..... | Nov. 17, 1857. |
| 18847 | Valve cock, spring..... | Moses C. Hawkins, Jacob W. Goodwin, and James Cummings..... | Erie, Pa..... | Dec. 15, 1857. |
| 17583 | Valve-connexions for steam-engines..... | Benjamin L. Phillips..... | Providence, R. I..... | June 16, 1857. |

VI.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|------------------------|-----------------|
| 18211 | Valve-gear for oscillating steam-engines..... | John C. Pennington..... | Patterson, N. J..... | Sept. 15, 1857. |
| 18268 | Valve-gear for oscillating steam engines..... | Norman W. Wheeler..... | New York, N. Y..... | Sept. 22, 1857. |
| 17699 | Valve-gear for steam-engines..... | Sidney Maltby..... | Dayton, Ohio..... | June 30, 1857. |
| 16809 | Valve-gear of direct-action steam-engines..... | J. P. Ross..... | Lewistown, Pa..... | Mar. 10, 1857. |
| 17586 | Valve-gear of steam-engines..... | Samuel Swartz..... | Buffalo, N. Y..... | June 16, 1857. |
| 18837 | Valve-gear of steam-engines, cut-off..... | Horatio Allen..... | New York, N. Y..... | Dec. 16, 1857. |
| 16516 | Valve of steam-hammers, operating..... | P. L. Welmer and S. P. Francisco, assignors to S. P. Francisco. | Reading, Pa..... | Jan. 27, 1857. |
| 16593 | Valve, throttle, of marine engines, arrange- ment of means for controlling the. | William H. Elliott..... | Plattsburg, N. Y..... | Feb. 10, 1857. |
| 17718 | Valves, arrangement of, in steam-cylinders..... | M. E. Stacy, assignor to W. John Way..... | Flemington, Ga..... | June 30, 1857. |
| 16570 | Valves, cut-off, operating, of steam-engines..... | George H. Reynolds, assignor to G. H. Rey- nolds and D. B. Hinckley. | Medford, Mass..... | Feb. 3, 1857. |
| 17643 | Valves, cylindrical throttle, for steam-engines..... | James H. Simmons..... | Erwin, N. Y..... | June 23, 1857. |
| 16361 | Valves for steam-engines..... | Bornall Bradley..... | Manchester, Va..... | Jan. 6, 1857. |
| 16765 | Valves for steam-engines, operating..... | Norman W. Wheeler..... | Cincinnati, Ohio..... | Mar. 3, 1857. |
| 18925 | Valves of steam-engines, giving motion to..... | Horatio O. Perry..... | Buffalo, N. Y..... | Dec. 22, 1857. |
| 16668 | Valves of steam-engines, operating..... | Samuel B. Wilmot..... | Watertown, Conn..... | Feb. 17, 1857. |
| 18197 | Valves of steam-engines, operating..... | Robert H. Fletcher..... | Brooklyn, N. Y..... | Sept. 15, 1857. |
| 18311 | Valves of steam-engines, operating the, vari- able eccentrics for. | S. L. Wiegand..... | Philadelphia, Pa..... | Sept. 29, 1857. |
| 17348 | Valves, safety, arrangement of, within steam- boilers. | George P. Clarke, assignor to himself and William M. Littell. | Newark, N. J..... | May 19, 1857. |
| 17712 | Valves, slide, for steam-engines..... | Thomas Winans..... | Baltimore, Md..... | June 30, 1857. |
| 18667 | Valves, slide, for steam-engines..... | Nathan Atherton..... | Philadelphia, Pa..... | Nov. 24, 1857. |
| 16368 | Valves, slide, operating, of steam-engines..... | Robert H. Fletcher..... | Brooklyn, N. Y..... | Jan. 6, 1857. |
| 18226 | Valves, steam, arrangement of passages and means for working, by the direct action of steam. | Barnabas Roberts and Alexander Crumble, assignors to themselves and John Ben- son. | Brooklyn, N. Y..... | Sept. 15, 1857. |
| 17893 | Valves and passages to the cylinders of steam- engines, arrangement of. | John A. Reed..... | Jersey city, N. J..... | July 28, 1857. |

CLASS VII.—NAVIGATION AND MARITIME IMPLEMENTS, comprising all vessels for conveyance on water, their construction, rigging, and propulsion, diving-dresses, life-preservers, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|----------------------------|-----------------|
| 16776 | Alarm, nautical..... | E. L. Seymour, assignor to J. C. and Charles Wright, H. I. Green, and E. L. Seymour. | New York, N. Y..... | Mar. 3, 1857. |
| 16821 | Anchor, shackle, second..... | George Gilmour, assignor to G. Gilmour and H. R. Clinkard. | Chelsea, Mass..... | Mar. 10, 1857. |
| 17182 | Anchor-trippers..... | John B. Holmes, assignor to John B. Holmes and John R. Pratt. | New York, N. Y..... | April 28, 1857. |
| 16856 | Anchors..... | Thomas L. Dalton..... | New York, N. Y..... | Jan. 6, 1857. |
| 18044 | Bertha, ships'..... | Henry Getty..... | Brooklyn, N. Y..... | Aug. 25, 1857. |
| 16656 | Boat-oars..... | Rufus Bode..... | Manchester, Pa..... | Feb. 17, 1857. |
| 16904 | Boat, portable..... | Robert C. Buchanan..... | Baltimore, Md..... | Mar. 21, 1857. |
| 18694 | Boats, canal, attaching paddle-wheels to..... | Benben Jane..... | Otsego, N. Y..... | Nov. 24, 1857. |
| 18107 | Boats, canal, tow-lines of, means for attaching whistle-trees to the..... | Andrew Seaman..... | Amsterdam, N. Y..... | Sept. 1, 1857. |
| 18683 | Boats, ferry, means for stopping and starting..... | Joseph C. Day..... | Jersey City, N. J..... | Nov. 24, 1857. |
| 17192 | Boats for duck-shooting..... | Robert Bogie..... | Rock Hall, Md..... | May 6, 1857. |
| 17052 | Boats, ice-breaking..... | Zachariah Oram..... | Camden, N. J..... | April 7, 1857. |
| 18632 | Boats, ice-breaking..... | James D. and H. O. Foster and John Q. Miller. | Springfield, Ohio..... | Dec. 8, 1857. |
| 16491 | Boat, life..... | Matthias Ludlum..... | Essex, N. Y..... | Jan. 27, 1857. |
| 18233 | Boats, life..... | Mortimer M. Camp..... | New Haven, Conn..... | Sept. 22, 1857. |
| 17692 | Boats, propeller canal..... | George W. Swarts..... | Buffalo, N. Y..... | June 16, 1857. |
| 16704 | Boats, steam, shoving-poles for..... | D. Cummings, jr., assignor to D. Cummings, sen. | Mobile, Ala..... | Feb. 24, 1857. |
| 18095 | Boats, surf and life..... | Richard C. Holmes..... | Cape May county, N. J..... | Sept. 1, 1857. |
| 16774 | Capstans, ships'..... | John B. Holmes, assignor to John R. Pratt. | New York, N. Y..... | Mar. 3, 1857. |
| 17715 | Capstans, ships'..... | Robert Dunbar and John F. Robertson, assignors to the Buffalo Eagle Iron Works Co. | Buffalo, N. Y..... | June 30, 1857. |
| 17971 | Capstans, ships'..... | David Knowlton..... | Camden, Me..... | Aug. 11, 1857. |
| 17969 | Capstans, ships'..... | Samuel Huse..... | New York, N. Y..... | Aug. 11, 1857. |

VII.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|---------------------------|---|
| 18053 | Capetans, ships' | Charles E. Marwick | Portland, Me. | Aug. 26, 1857. |
| 16935 | Capetans, steamboat | John Schaffer | Manchester, Pa. | Mar. 31, 1857. |
| 18260 | Diving-apparatus | George Williamson | Brooklyn, N. Y. | Sept. 22, 1857. |
| 18468 | Harpoons | James Q. Kelly | Sag Harbor, N. Y. | Oct. 20, 1857. |
| 16655 | Life-preservers | Warren A. Simonds | Boston, Mass. | Feb. 3, 1857. |
| 17434 | Life-preservers | James Knight | New York, N. Y. | June 2, 1857. |
| 18274 | Life-preservers | Charles J. Bunker | New York, N. Y. | Sept. 29, 1857. |
| 18809 | Life-preservers | Abraham J. Gibson | Worcester, Mass. | Dec. 8, 1857. |
| 18869 | Life-preservers | James E. Serrell and William Davis | New York, N. Y. | Dec. 15, 1857. |
| 18090 | Life-preserving berths for steam and other vessels | Elbridge Foster | Hartford, Conn. | Sept. 1, 1857. |
| 16589 | Paddle-wheels, feathering | Lewis T. Howard | Smith's Mills, Miss. | Feb. 10, 1857. |
| 18202 | Paddle-wheels, feathering | Lewis T. Howard | Smith's Mills, Miss. | Sept. 16, 1857. |
| 17943 | Propeller-blade | George W. Swarts | Buffalo, N. Y. | Aug. 4, 1857. |
| 17276 | Propeller-blades | George Hirsch | Buffalo, N. Y. | May 12, 1857. |
| 17017 | Propellers | Robert Griffiths | London, England | April 7, 1857; England, Sept. 13, 1849. |
| 18814 | Propellers | Abner Johnson | Buffalo, N. Y. | Dec. 8, 1857. |
| 18314 | Propelling-apparatus, marine | Ethan Campbell, assignor to W. P. Page and Edward F. Hodges | Boston, Mass. | Sept. 29, 1857. |
| 17156 | Propelling-wheels, submerged | Thomas Kendall, sen | San Francisco, Cal. | April 28, 1857. |
| 16352 | Rudders | A. B. Crossman | Huntington, N. Y. | Jan. 6, 1857. |
| 17572 | Rudders | R. S. Harris | Galena, Ill. | June 16, 1857. |
| 16969 | Sails, reefing | Washington F. Davis | Winthrop, Mass. | April 7, 1857. |
| 17101 | Sails, reefing | F. C. Le Croix and Chauncey Barnes | New York, N. Y. | April 21, 1857. |
| 18219 | Sails, reefing and furling, arrangement of means for | George W. La Baw, assignor to himself and Charles A. Durgin | Jersey City, N. J. | Sept. 15, 1857. |
| 17616 | Sails, top, means for reducing | Thomas Batty | Brooklyn, N. Y. | June 23, 1857. |
| 17365 | Sails, top, means for reefing | James E. Cole | New York, N. Y. | May 26, 1857. |
| 17977 | Sails, top, reefing | James W. Norcross | Roston, Mass. | Aug. 11, 1857. |
| 18085 | Shackle-blocks, messenger | George Gilmour | Chelsea, Mass. | April 21, 1857. |

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|-------|--|---|---------------------------|---|
| 16965 | Ship-board, hoisting-winch for..... | Joel Bryant..... | Brooklyn, N. Y..... | April 7, 1857; additional improvement Aug. 11, 1857. |
| 16707 | Ships' blocks, for sustaining friction-rollers in..... | John Allender..... | New London, Conn..... | Mar. 3, 1857. |
| 17940 | Ships, compound capstans for..... | Charles Perley..... | New York, N. Y..... | Aug. 4, 1857. |
| 17228 | Ships' hawse-holes..... | Robert R. Osgood, assignor to J. C. Osgood..... | Troy, N. Y..... | May 5, 1857. |
| 16845 | Ships, magnetic needle on, mode of compensating the local attraction of the..... | Calvin Kline..... | New York, N. Y..... | Mar. 17, 1857. |
| 18192 | Ships' pumps..... | Abraham Coates and Samuel M. Perry..... | New York, N. Y..... | Sept. 15, 1857. |
| 17780 | Ships, rigging of..... | James E. Cole..... | Brooklyn, N. Y..... | July 7, 1857. |
| 17031 | Ships' sails, reefing..... | James Emerson..... | Worcester, Mass..... | April 14, 1857. |
| 16773 | Ships' steering-apparatus..... | John B. Holmes, assignor to John R. Pratt..... | New York, N. Y..... | Mar. 3, 1857. |
| 17003 | Ships' steering-apparatus..... | Samuel N. Smith..... | New York, N. Y..... | April 7, 1857. |
| 17525 | Ships, steering-apparatus for..... | Phineas Smith..... | Patchogue, N. Y..... | June 9, 1857. |
| 17975 | Ships, the depth of water in, instruments for indicating..... | G. B. Massey..... | Mobile, Ala..... | Aug. 11, 1857. |
| 16885 | Ship's windlass, operating..... | Norman Smith..... | Stonington, Conn..... | Mar. 24, 1857. |
| 17633 | Ships' windlasses..... (See Class VIII, letter S.) | Joseph Peavy and A. Sanborn..... | Bangor, Me..... | June 23, 1857. |
| 17724 | Steering-apparatus..... | Dexter H. Chamberlain..... | West Roxbury, Mass..... | July 7, 1857. |
| 18663 | Steering-apparatus..... | T. M. Richardson, assignor to himself and J. W. Havner..... | Searport, Me..... | Nov. 17, 1857. |
| 17122 | Surge or cable springs..... | William Wilcox..... | East Hartford, Conn..... | April 21, 1857. |
| 16850 | Vessels, extra top-sail yards to, attaching..... | Eber H. Linnell..... | Orleans, Mass..... | Feb. 17, 1857. |
| 17209 | Vessels, ice-cutting, attachments to..... | Thomas Estlack..... | Philadelphia, Pa..... | May 5, 1857. |
| 17396 | Vessels' keels, apparatus for examining..... | James E. Simpson..... | East Boston, Mass..... | May 26, 1857. |
| 18819 | Vessels, life and treasure buoy for, arrangement of..... | Francis D. Lee..... | Charleston, S. C..... | Dec. 8, 1857. |
| 16510 | Vessels, masts in the decks of, supporting..... | Thomas J. Woodworth..... | Salem, N. J..... | Jan. 27, 1857. |
| 18411 | Vessels, means for flooding..... | John Quigly..... | Saugerties, N. Y..... | Oct. 13, 1857. |
| 17698 | Vessels, means for propelling, in shoal water..... | J. W. Wetmore..... | Erle, Pa..... | June 16, 1857. |
| 18969 | Vessels, mooring..... | Armigel W. Hancock..... | Allegan county, Mich..... | Dec. 29, 1857. |
| 17826 | Vessels, raising sunken, arrangement of camels for..... | Thomas Bell..... | Bellport, N. Y..... | July 21, 1857; England, April 16, 1856. |
| 16890 | Vessels, rigging..... | George F. Treseot..... | Charleston, S. C..... | Mar. 24, 1857. |
| 17165 | Vessels, sails and rigging of..... | George T. May..... | Tompkinsville, N. Y..... | April 28, 1857. |
| 18816 | Vessels, securing batches of..... | Edward S. Keyser..... | New York, N. Y..... | Dec. 8, 1857. |

VII.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|--------------------|-----------------|
| 17852 | Vessels, shot holes in, means for stopping | John Woodville | Chillicothe, Ohio. | July 21, 1857. |
| 17849 | Vessels, speed of, apparatus for indicating the, and depth of water. | David Hinman and T. F. Fournier, assignors to themselves and R. J. Parker. | Berla, Ohio. | May 19, 1857. |
| 18835 | Vessels, steering-apparatus for. | Charles Weed, assignor to himself and Stephen B. Cram. | Boston, Mass. | Dec. 8, 1857. |
| 17892 | Vessels, sunken, mode of raising. | John Ponton | New York, N. Y. | July 28, 1857. |
| 16487 | Vessels, sunken, raising. | John P. Jourda | New York, N. Y. | Jan. 27, 1857. |
| 18639 | Vessels, unloading, apparatus for | Robert Ferguson | New Orleans, La. | Nov. 3, 1857. |
| 16333 | Vessels, velocimeters for. | Andrew B. Gray and Alexander H. Brown. | Washington, D. C. | Jan. 6, 1857. |
| 16621 | Vessels, water in the holds of, apparatus for indicating the height of. | William R. Warden. | Boston, Mass. | Feb. 10, 1857. |
| 16992 | Vessels, &c., hawse-holes for | Jason C. Osgood. | Troy, N. Y. | April 7, 1857. |

CLASS VIII.—*MATHEMATICAL, PHILOSOPHICAL, AND OPTICAL INSTRUMENTS, including clocks, chronometers, &c.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|-------------------|-----------------|
| 18692 | Arithmometer | Thomas Hill | Waltham, Mass. | Nov. 24, 1857. |
| 18675 | Arithmometer for adding. | D. L. Castle | Upper Alton, Ill. | Nov. 24, 1857. |
| 18560 | Barometer | Theodore R. Timby | Medina, N. Y. | Nov. 3, 1857. |
| 16727 | Chronometer-escapements | James Fulton | Louisville, Ky. | March 3, 1857. |
| 18661 | Clock-movements, machine for turning pillars for. | W. H. Nettleton, Charles Raymond, and A. Hatch, assignors to W. H. Nettleton. | Bristol, Conn. | Nov. 17, 1857. |
| 18890 | Clocks | Robert P. Cunningham. | Eastford, Conn. | Dec. 22, 1857. |
| 16418 | Clocks, calendar | M. J. Whitmore, assignor to himself and F. G. Johnson. | Potdam, N. Y. | Jan. 13, 1857. |
| 16628 | Clocks, calendar | Edwin P. Monroe, assignor to Gilbert H. Scribner. | Albany, N. Y. | Feb. 10, 1857. |

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|-------|--|--|------------------------|--|
| 18665 | Clocks, calendar..... | William H. Atkins and Joseph C. Burritt, assignors to Walt T. Huntington and Hervey Platt. | Berkshire, N. Y..... | Nov. 10, 1857. |
| 18902 | Delineators, grade..... | George B. Clark and Samuel Adams. | Antioch, Cal..... | Mar 31, 1857. |
| 18998 | Dynamometer..... | George Juengst | New York, N. Y..... | Dec. 22, 1857. |
| 17185 | Gauges for caeks..... | John W. Cochrane | New York, N. Y..... | April 28, 1857. |
| 18931 | Globe, apparatus for illustrating comic sections and the lines of the. | Forrest Shephard | New Haven, Conn..... | Dec. 22, 1857. |
| 17481 | Insulated wire, machines for covering, with lead or other ductile metal. | Samuel C. Bishop | New York, N. Y..... | June 9, 1857. |
| 18572 | Latitude at sea, approximate, method of determining. | Edward Cavendy | New York, N. Y..... | Nov. 10, 1857. |
| 18963 | Lightning-rods, device for attaching..... | J. B. Elliott | Philadelphia, Pa..... | Dec. 29, 1857. |
| 17606 | Measures, lineal, machines for graduating..... | Samuel C. Hubbard, assignor to Charles C. Hubbard. | Middletown, Conn..... | June 16, 1857; ante-dated Dec. 16, 1856. |
| 16359 | Measuring boards, instrument for..... | James Jones | Rochester, N. Y..... | Jan. 6, 1857. |
| 18313 | Measuring cloth, machines for..... | William W. Wythes | St. Clair, Pa..... | Sept. 29, 1857. |
| 18711 | Multiplying numbers, machine for..... | James D. Smith | Brantingham, N. Y..... | Nov. 24, 1857. |
| 17670 | Pendulum-levels, adjustments applied to..... | Calvin Cole | Tarrytown, N. Y..... | July 28, 1857. |
| 17023 | Pendulum-levels or inclinometers..... | Thomas A. Chandler | Rockford, Ill..... | April 14, 1857. |
| 18701 | Pendulum-quadrant..... | Robert Norris and Frederick Peters | New York, N. Y..... | Nov. 24, 1857. |
| 17253 | Signal-lamps..... | R. P. Bailey | Niagara, N. Y..... | May 12, 1857. |
| 18169 | Spectacle-bows, machine for expanding..... | Albert Potts | Philadelphia, Pa..... | Sept. 8, 1857. |
| 18194 | Square, mitre-square, and level combined. (See Class XIV, letter S.) | George N. Cummings | Hartford, Conn..... | Sept. 16, 1857. |
| 18327 | Squares, carpenters', machines for graduating-figures on. (See Class XIV, letter S.) | Samuel Darling | Bangor, Me..... | Oct. 6, 1857. |
| 17991 | Squares, metallic, manufacture of..... | Joel Whitney | Winchester, Mass..... | Aug. 11, 1857. |
| 18728 | Squares, try-adjustment for..... | Christopher Becker | Brooklyn, N. Y..... | Dec. 1, 1857. |
| 18608 | Surveying-level..... | James M. Lilley | Greenville, Va..... | Nov. 10, 1857. |
| 17355 | Surveying and calculating areas, instrument for. | William F. Channing and Moses G. Farmer, assignors to William F. Channing. | Boston, Mass..... | May 19, 1857. |
| 18032 | Telegraph for cities, electro-magnetic fire-alarm. | John E. Smith | Salem, Mass..... | Aug. 18, 1857. |
| 18626 | Telegraph-repeaters..... | Edward C. Clay | Troy, N. Y..... | Nov. 17, 1857. |
| | Telegraphic fire-alarm apparatus, device in..... | | Boston, Mass..... | |

VIII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|-------------------------|--|
| 16328 | Telegraphic-repeaters | M. G. Farmer and A. F. Woodman | Salem, Mass | Mar. 17, 1857. |
| 18149 | Telegraphic signals, transmitting, machines for punching paper fillets for. | J. P. Humaston | New Haven, Conn | Sept. 8, 1857. |
| 18131 | Telegraphic wires, insulated, enclosed in metallic tubing. | Samuel C. Bishop | New York, N. Y. | Sept. 8, 1857. |
| 18147 | Telegraph, bell, attaching wires to | Henry Hochstrasser | Philadelphia, Pa | Sept. 8, 1857. |
| 18665 | Telegraphs, electric | William D. Wesson | Chillicothe, Ohio | Feb. 17, 1857. |
| 17673 | Telegraphs, electric | Harrison Gray Dyar | New York, N. Y. | June 30, 1857. |
| 17997 | Time of attendance of workmen, marking, machines for. | Benjamin T. Harris, assignor to John McKillop | Brooklyn, N. Y. | Aug. 11, 1857. |
| 16944 | Time-pieces, maintaining power for | James Tuerling | New York, N. Y. | Jan. 6, 1857. |
| 17055 | Watches | George P. Reed | Waltham, Mass | April 14, 1857; renewed Nov. 24, 1857. |

CLASS IX.—CIVIL ENGINEERING AND ARCHITECTURE, comprising works on rail and common roads, bridges, canals, wharves, docks, rivers, weirs, dams, and other internal improvements, buildings, roofs, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|----------------------------|-----------------|
| 16395 | Barns, stables, &c., apparatus for, for rescuing horses and other stock from fire. | Joshua E. Hall | Cleveland, Ohio | Oct. 13, 1857. |
| 17256 | Barnack, portable | Matthias F. Brantingham | Sangamon county, Ill. | May 12, 1857. |
| 16473 | Blasting rocks under water, apparatus for. | James B. Eads | St. Louis, Mo. | Jan. 27, 1857. |
| 18037 | Blind slats, device for piercing, to receive the staples. | John Carpenter | Stonington, Conn | Aug. 25, 1857. |
| 17064 | Boring artesian wells, apparatus for | Jesse N. Bolles, assignor to M. W. Bolles | Philadelphia, Pa. | April 14, 1857. |

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| 16573 | Bridge..... | Thomas W. H. Moesly..... | Covington, Ky..... | Feb. 3, 1857. |
| 18253 | Bridge, trussed..... | Abraham S. Swarts..... | Buffalo, N. Y..... | Sept. 22, 1857. |
| 16728 | Bridge-trusses..... | Albert Fink..... | Parkensburg, Pa..... | Mar. 3, 1857. |
| 16446 | Bridges..... | D. C. McCallum..... | Oswego, N. Y..... | Jan. 20, 1857. |
| 18196 | Bridges..... | Charles H. Earle..... | Green Bay, Wis..... | Sept. 16, 1857. |
| 17654 | Bridges, iron truss-frames for..... | Francis C. Lowthorp..... | Trenton, N. J..... | June 30, 1857. |
| 17722 | Bridges, truss..... | Joel Brown, Jr..... | Buffalo, N. Y..... | July 7, 1857. |
| 18648 | Bridges, &c., iron truss-frames for..... | Francis C. Lowthorp..... | Trenton, N. J..... | Nov. 3, 1857. |
| 17864 | Bridges, &c., segmented truss for..... | George S. Avery..... | Lawaboro', N. Y..... | July 28, 1857. |
| 17922 | Closets, water..... | Lewis Fisher..... | Buffalo, N. Y..... | Aug. 11, 1857. |
| 18550 | Closets, water..... | Francis McCham..... | Washington, D. C..... | Nov. 3, 1857. |
| 18972 | Closets, water..... | James T. Henry and William P. Campbell..... | Philadelphia, Pa..... | Dec. 29, 1857. |
| 18404 | Digging-machine..... | James Mitchell..... | Oscola, Iowa..... | Oct. 13, 1857. |
| 18398 | Ditching-machines..... | Edward and Britain Holmes..... | Buffalo, N. Y..... | Oct. 13, 1857. |
| 18659 | Ditching, &c., levelling instrument for..... | Joseph Gray..... | Raymond, Miss..... | Nov. 24, 1857. |
| 18627 | Door-guard, elastic..... | William N. Clark..... | Chester, Conn..... | Nov. 17, 1857. |
| 17242 | Door-sill and door-strip, arrangement of..... | Henry Tryon..... | Stenton, Pa..... | May 5, 1857. |
| 17513 | Doors, hanging, mode of..... | Albert W. Morse..... | Eaton, N. Y..... | June 9, 1857. |
| 18554 | Doors, windows, &c., iron shutters for..... | M. C. Root..... | Toledo, Ohio..... | Nov. 3, 1857. |
| 16341 | Doors, windows, &c., weather-strips for..... | James Smith..... | Cleveland, Ohio..... | Jan. 6, 1857. |
| 16874 | Doors, windows, &c., weather-strips for..... | J. T. Foster, J. J. Banta, and J. H. Banta..... | Jersey City, N. J..... | Mar. 24, 1857. |
| 17809 | Draining-machine..... | A. P. Routh..... | Somerset, Va..... | July 14, 1857. |
| 16856 | Dredging, grappling or, machine..... | Augustus Stoner..... | Mount Joy, Pa..... | Mar. 24, 1857. |
| 17959 | Dredging-machines..... | Asa Blood, sr..... | Norfolk, Va..... | Aug. 11, 1857. |
| 18352 | Drilling machine, rock-cutting and..... | William Plumer..... | Boston, Mass..... | Oct. 6, 1857. |
| 17766 | Drilling, rock, machines..... | Lemuel P. Jenks and George A. Gardner, assignors to George A. Gardner..... | New York, N. Y..... | July 7, 1857. |
| 17765 | Drilling, rock, machines..... | Lemuel P. Jenks, assignor to George A. Gardner..... | Boston, Mass..... | July 7, 1857; ante-dated Jan. 7, 1857. |
| 17896 | Drilling rock, machines for..... | M. T. Rowlands..... | Pittston, Pa..... | July 28, 1857. |
| 16787 | Drills, rock..... | Thomas H. Burridge..... | St. Louis, Mo..... | Mar. 10, 1857. |
| 17304 | Drills, rock..... | John D. Hope, assignor to G. A. Gardner..... | Niagara Falls, N. Y..... | May 12, 1857. |
| 18551 | Drills, rock..... | George H. Wood..... | Green Bay, Wis..... | Nov. 3, 1857. |
| 18763 | Drills, rock..... | Joseph E. Neesen..... | New York, N. Y..... | Dec. 1, 1857. |
| 18573 | Earth-moving machine..... | John Cowdon..... | New Orleans, La..... | Nov. 10, 1857. |
| 18113 | Eave-troughs, apparatus for suspending..... | James A. Watrous..... | Green Spring, Ohio..... | Sept. 1, 1857. |
| 16519 | Excavating and dredging machine..... | Jonathan B. Anderson..... | Chicago, Ill..... | Feb. 3, 1857. |
| 17595 | Excavating-machines..... | Alonso Taggart..... | Warrenton, Mo..... | June 16, 1857. |
| 16552 | Excavating rock, machines for..... | Jason C. Osgood..... | Troy, N. Y..... | Feb. 17, 1857. |

IX.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|------------------------|-----------------|
| 17650 | Excavating tunnels, machines for..... | Charles Wilson..... | Springfield, Mass..... | June 23, 1857. |
| 17174 | Excavator..... | Samuel W. Soule..... | St. Louis, Mo..... | April 28, 1857. |
| 17669 | Excavator, earth..... | Curlius Colley..... | Wilson, N. Y..... | June 30, 1857. |
| 17306 | Excavator, sub-marine..... | William Kennish, assignor to Andrew B. Gray..... | Brooklyn, N. Y..... | May 13, 1857. |
| 16397 | Excavators..... | William Provines..... | Columbia, Mo..... | Jan. 13, 1857. |
| 18186 | Excavators..... | Z. Batt..... | Lincolnton, N. C..... | Sept. 16, 1857. |
| 18581 | Excavators, rotary..... | G. H. Moore..... | Rochester, N. Y..... | Nov. 3, 1857. |
| 17693 | Fence..... | James Moore..... | Pittsburg, Pa..... | June 30, 1857. |
| 16598 | Fence, adaptable to uneven ground..... | G. R. McIlroy..... | Covington, Ky..... | Feb. 10, 1857. |
| 16389 | Fence, field..... | Seneca H. Bennett..... | Belleville, Pa..... | Jan. 13, 1857. |
| 16996 | Fence, field..... | Samuel Rains..... | Litwalton, Va..... | April 7, 1857. |
| 18863 | Fence, field, portable..... | Thomas B. Page..... | Laurel, Ohio..... | Dec. 15, 1857. |
| 18934 | Fence, field, portable..... | H. T. Stenard..... | Wayne, Mich..... | Dec. 22, 1857. |
| 18064 | Fence for poultry yards..... | William P. Thomas..... | Whitewater, Ind..... | Aug. 26, 1857. |
| 17514 | Fence, portable..... | William Morrison..... | Carlisle, Pa..... | June 9, 1857. |
| 17201 | Fence, portable field..... | Ezra Cole..... | Fairhaven, Mich..... | May 5, 1857. |
| 17303 | Fence, portable field..... | Seath G. Tutta..... | Mainville, Ohio..... | May 13, 1857. |
| 16486 | Fence-posts, method of constructing..... | Frank G. Johnson..... | Brooklyn, N. Y..... | Jan. 27, 1857. |
| 16406 | Fences, field, base or support for posts of..... | Odd Spencer..... | Jacksonburg, Ohio..... | Jan. 13, 1857. |
| 17743 | Fences, field, panels of, method of connecting the..... | Samuel F. Jones..... | Milford, Ind..... | July 7, 1857. |
| 16675 | Fences, field, the panels of, mode of securing to each other..... | C. P. Garlick and M. G. Blackstone..... | Mainville, Ohio..... | Feb. 3, 1857. |
| 17010 | Fences, iron, method of constructing..... | William S. Fuller, assignor to William D. Cutler..... | Milbury, Mass..... | April 7, 1857. |
| 17075 | Fences, portable field, method of clamping and unclamping panels of..... | William B. Burnett..... | Lyons, N. Y..... | April 21, 1857. |
| 18952 | Fences, portable field, method of connecting the panels of..... | John H. Bruen..... | Elmhurst, N. Y..... | Dec. 29, 1857. |
| 17310 | Fences, portable field, panels of, method of uniting and sustaining the..... | Isaac D. Garlick..... | Lyons, N. Y..... | May 5, 1857. |

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|-------|---|---|--------------------------|-----------------|
| 17459 | Fences, portable, method of uniting the panels of. | Charles Van De Mark..... | Oaks Corners, N. Y. | June 2, 1857. |
| 18301 | Fences, wire, construction of..... | J. B. Reymann..... | Bloomington, Ill..... | Sept. 29, 1857. |
| 17335 | Gate, approach-opening..... | George W. McGill..... | Buffalo, N. Y..... | May 19, 1857. |
| 18383 | Gate, approach-opening..... | Charles A. Howard..... | Pontiac, Mich..... | Sept. 29, 1857. |
| 18932 | Gate, approach-opening farm..... | C. W. Smart..... | Watertown, N. Y..... | Dec. 29, 1857. |
| 16978 | Gate-post attachable to any panel of its corresponding field fence. | James G. Hunt..... | Cincinnati, Ohio..... | April 7, 1857. |
| 16396 | Gates, device by which persons approaching may open. | Royal E. House..... | Binghampton, N. Y..... | Jan. 13, 1857. |
| 16791 | Gates, farm, devices for raising or lowering, to allow them to open over obstacles. | Dennis E. Fenn..... | Tallmadge, Ohio..... | Mar. 10, 1857. |
| 16400 | Gates, farm, method of hanging..... | Isaac S. Roland..... | West Earl, Pa..... | Jan. 13, 1857. |
| 18449 | Gates, farm, mode of closing..... | Thomas B. Hand..... | Madison, Ind..... | Oct. 30, 1857. |
| 17699 | Gates, farm, mode of opening and closing..... | William Sherwood..... | Beloit, Wis..... | June 30, 1857. |
| 17303 | Gates, method of opening and closing, by approaching vehicles. | Solomon Cole..... | Rochester, N. Y..... | May 6, 1857. |
| 18308 | Gates, vertico-lateral folding, method of opening and closing. | Francis Thrasher and Henry B. Horton..... | Akron, Ohio..... | Sept. 29, 1857. |
| 17551 | Hatchways, safety-attachment for..... | James Bridge..... | Augusta, Me..... | June 16, 1857. |
| 17270 | Houses, portable, mode of constructing..... | Daniel Fitzgerald..... | New York, N. Y..... | May 12, 1857. |
| 16426 | Lathing and plastering, mode of..... | John G. Vaughan, assignor to Benjamin Trott, assignor to Isaac M. Singer..... | Middleboro', Mass..... | Jan. 13, 1857. |
| 16702 | Lathings, metallic..... | W. E. Worthen..... | New York, N. Y..... | Feb. 24, 1857. |
| 17550 | Laths for buildings..... | John L. Brabyn..... | New York, N. Y..... | June 16, 1857. |
| 18555 | Lock-gates, canal..... | Samuel J. Seely..... | New York, N. Y..... | Nov. 3, 1857. |
| 17065 | Mines, winding machinery for..... | Edmund M. Ivens, assignor to E. M. Ivens and L. H. Allen..... | Tamaqua, Pa..... | April 14, 1857. |
| 18417 | Pavement, cellular, iron..... | S. H. Titus and O. Des Granges..... | St. Louis, Mo..... | Oct. 13, 1857. |
| 17198 | Pavement, side-walk..... | John B. Cornell..... | New York, N. Y..... | April 28, 1857. |
| 16757 | Pavements, cast iron..... | Charles J. Shepard..... | Brooklyn, N. Y..... | Mar. 3, 1857. |
| 16692 | Pavements, iron..... | Charles Mettam..... | New York, N. Y..... | Feb. 24, 1857. |
| 17662 | Pavements, iron, for streets..... | George W. Blahup..... | Brooklyn, N. Y..... | June 30, 1857. |
| 18251 | Pavements, iron or other, mode of connecting or disconnecting the blocks of. | B. C. Smith..... | Burlington, N. J..... | Sept. 23, 1857. |
| 16490 | Rail, compound, for railroads..... | Charles T. Liernur..... | Mobile, Ala..... | Jan. 27, 1857. |
| 16605 | Rail for street railroads..... | Samuel Nicolson..... | Boston, Mass..... | Feb. 10, 1857. |
| 17478 | Railroad bars, machine for repairing..... | Lyman Beebe and George F. Smith..... | Michigan City, Ind..... | June 9, 1857. |

IX.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-----------------------|-----------------|
| 17178 | Railroad-chair machine. | Corydon Winch | Jersey City, N. J. | April 28, 1857. |
| 18093 | Rail, railroad. | Edward W. Stephens and Richard Jenkins. | Covington, Ky. | Aug. 18, 1857. |
| 17580 | Railroad snow-excavators. | S. Y. Ludlum. | Oyster Bay, N. Y. | June 16, 1857. |
| 17492 | Railroad switch-lock. | William L. Cawthron | Harper's Ferry, Va. | June 9, 1857. |
| 16898 | Railroads. | Hiram Carpenter, assignor to American Iron Railway Company. | New York, N. Y. | Mar. 24, 1857. |
| 18144 | Railroads, cross-ties of, machine for ramming under the. | Richard B. Harrison | Vicksburg, Miss. | Sept. 8, 1857. |
| 16623 | Railroads, locomotive cow-catchers for. | Joel Wisner | Aurora, N. Y. | Feb. 10, 1857. |
| 16343 | Railroads, metallic cross-ties and chairs for, as a new manufacture. | Andrew Teal | Aurora, Ill. | Jan. 6, 1857. |
| 16376 | Balls, fixed, arrangement of, as a substitute for railroad switches. | Joseph T. Davenport. | Augusta, Ga. | Jan. 13, 1857. |
| 18494 | Railways, construction of. | Sidney A. Beers | Brooklyn, N. Y. | Oct. 27, 1857. |
| 18577 | Railways, rails for. | Timothy Dwight | New Haven, Conn. | Nov. 10, 1857. |
| 17003 | Road-scraper | George W. Thomas | North Kingston, R. I. | April 7, 1857. |
| 16963 | Road-scraper | C. Blakeslee | Ashabula, Ohio | April 7, 1857. |
| 17529 | Road-scraper | Hiram Van Pelt. | Bath, N. Y. | June 9, 1857. |
| 16767 | Roof, metallic. (See Class XV, letter C.) | W. E. Worthen | New York, N. Y. | Mar. 3, 1857. |
| 18278 | Roofing-cements, preparing | Robert T. Havens | Castown, Ohio. | Sept. 29, 1857. |
| 17861 | Roofing-compositions | John B. Wanda | Chicago, Ill. | July 21, 1857. |
| 16739 | Roofing-compounds, mastic | Charles B. Milks | Detroit, Mich. | Mar. 3, 1857. |
| 17497 | Roofing-machines | J. B. Driscoll | Knoxville, Tenn. | June 9, 1857. |
| 18186 | Roofing, mastic. | William H. Carver and J. Beckley | Covington, Ky. | Sept. 15, 1857. |
| 17893 | Roofing, mastic, compositions. | S. K. Lighter and James A. Morrell. | Cincinnati, Ohio. | Sept. 15, 1857. |
| 16770 | Roofing-materials, mastic. | Nathan A. Dyar, assignor to N. A. Dyar and S. D. Woodbury. | Hamilton, Ohio. | July 28, 1857. |
| 16614 | Roofing, metallic. | Benjamin Ross and John C. Campbell | Lynn, Mass. | Mar. 3, 1857. |
| 18677 | Roofing, metallic, for subterranean vaults. | John B. Cornell. | Syracuse, N. Y. | Feb. 10, 1857. |
| 17874 | Roofs, sheet-metal, machine for seaming. | Lucian Fay | New York, N. Y. | Nov. 24, 1857. |
| | | | Cincinnati, Ohio. | July 28, 1857. |

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| 17331 | Roofs, &c., sheet-metal on, mode of fastening. | Asa Johnson, assignor to himself, Henry Link, and William Higbie. | Calvo, N. Y. | May 19, 1857. |
| 18203 | Sash-balance, arrangement in. | Joseph R. Payson. | Covington, Ky. | Nov. 24, 1857. |
| 18223 | Sash-balance, cog-gear, mode of controlling. | John McMurtry, assignor to Daniel Wiehl. | Payette county, Ky. | Sept. 15, 1857. |
| 18376 | Sash-supporter. | Nathaniel E. Baker. | Holyoke, Mass. | Oct. 13, 1857. |
| 18375 | Stables, horses', crles of. | William Grosdale. | Hartsville, Pa. | Sept. 29, 1857. |
| 16982 | Staging-brackets, arrangement of. | Joseph B. Latham. | Phoenixville, Conn. | April 7, 1857. |
| 16980 | Staircases. | Augustus Eliacs. | Boston, Mass. | Jan. 13, 1857. |
| 18110 | Stair-rallings, circular, instruments for drawing the curve of. | George S. Stewart. | Meadville, Pa. | Sept. 1, 1857. |
| 17234 | Stair-steps, arrangement of. | Charles Robinson. | Cambridgeport, Mass. | May 5, 1857. |
| 16557 | Stalls for horses, mode of constructing. | Henry Eddy. | North Bridgewater, Mass. | Jan. 6, 1857. |
| 17637 | Stoves, mode of constructing. | William L. Johnson. | Patonsville, Tenn. | June 23, 1857. |
| 18118 | Stoves, &c., in case of fire, mode of removing. | Asa Blood, sr., and R. W. Brown. | Norfolk, Va. | Sept. 1, 1857. |
| 16563 | Stump-extractor. | Jason S. Wood. | Washington, D. C. | Feb. 3, 1857. |
| 17528 | Stump-extractor. | Peter Traxler. | Washington, N. J. | June 9, 1857. |
| 17512 | Trees by hand, felling, machine for. | E. T. Miller. | Scottdsburg, N. Y. | June 9, 1857. |
| 18383 | Trucks, self-dumping, arrangement of. | Z. Butt. | Chelsea, Mass. | Oct. 13, 1857. |
| 16579 | Truss-frames, shoes for. | R. Conyns. | Lincolnton, N. C. | Feb. 10, 1857. |
| 17198 | Vault-cover. (No. 1.) | John B. Cornell. | Troy, N. Y. | May 5, 1857. |
| 17199 | Vault-covers. (No. 2.) | John B. Cornell. | New York, N. Y. | May 5, 1857. |
| 17096 | Vault-covers. | George R. Jackson. | Bye, N. Y. | April 21, 1857. |
| 18551 | Vault-light covers. | George R. Jackson. | New York, N. Y. | April 22, 1857. |
| 17613 | Vault, ventilating, and platform-light. | John G. Wolvin, assignor to himself and George Peckham. | New York, N. Y. | Dec. 15, 1857. |
| 16451 | Vaults, reflectors for. | Emil R. Pichler. | New York, N. Y. | June 16, 1857. |
| 17097 | Vaults, ventilating, method of. | George R. Jackson. | Boston, Mass. | Jan. 20, 1857. |
| 16827 | Walls of buildings, mode of veneering the. | George B. and Benjamin F. Field. | Rye, N. Y. | April 21, 1857. |
| 16548 | Walls, pise-work, boxes for. | Otis and Wales Needham. | St. Louis, Mo. | Mar. 17, 1857. |
| 17937 | Window-blind sash-holder. | William S. Mayo. | New Haven, Conn. | Feb. 3, 1857. |
| 18569 | Window-blind slats, round tenons on, device for forming. | Thomas C. Ball. | New York, N. Y. | Aug. 4, 1857. |
| 16527 | Window-blinds. | Alexander M. Cochran. | Keene, N. H. | Nov. 10, 1857. |
| 16532 | Window-blinds. | Daniel Kelly and William Livingston. | New York, N. Y. | Feb. 3, 1857. |
| 17938 | Window-blinds, device for operating. | James McMeekin. | Grand Rapids, Mich. | Feb. 10, 1857. |
| 18966 | Window-blinds, folding. | Sylvanus S. Clark. | New York, N. Y. | Aug. 4, 1857. |
| 17922 | Window-blinds, mode of opening and closing. | Lucius N. Fay and William Mason. | Manchester, N. H. | April 7, 1857. |
| | | | Warren, Mass. | Aug. 4, 1857. |

IX.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|-----------------------|-----------------|
| 17923 | Window-blinds, slats of, device for operating— | Lucius N. Fay and William Mason..... | Warren, Mass..... | Aug. 4, 1857. |
| 17733 | Window-frame box | Joseph B. Dodge | St. Louis, Mo..... | July 7, 1857. |
| 18611 | Window-sash | Francis Thrasher and Henry B. Horton.... | Akron, Ohio..... | Nov. 10, 1857. |
| 18200 | Window-sash, mode of operating | John C. Grant | Salem, Mass..... | Sept. 15, 1857. |
| 18182 | Window-sash, mode of sustaining..... | Edward T. Briggs..... | Salem, Mass..... | Sept. 16, 1857. |
| 16559 | Window-sashes, hanging | William Webster | Morrisania, N. Y..... | Feb. 3, 1857. |
| 16998 | Window-shutters, mode of arranging and operating..... | D. Bohan | Cincinnati, Ohio..... | April 7, 1857. |

CLASS X.—LAND CONVEYANCE, comprising carriages, cars, and other vehicles used on roads, and parts thereof.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|---------------------------|-----------------|
| 16499 | Axle-boxes | Alfred E. Smith..... | Bronxville, N. Y..... | Jan. 27, 1857. |
| 16661 | Axles, hubs on, mode of securing..... | Alfred E. Smith..... | Bronxville, N. Y..... | Feb. 17, 1857. |
| 16891 | Axles, hubs to, mode of attaching | James M. White | Xenia, Ohio..... | Mar. 24, 1857. |
| 17083 | Axles, hubs to, mode of attaching | Lorenzo Window..... | Rochester, N. Y..... | April 14, 1857. |
| 17247 | Axles, hubs to, mode of securing | Leonard J. Worden..... | Utica, N. Y..... | May 6, 1857. |
| 16404 | Axles, mail, and hubs, mode of constructing..... | Alfred E. Smith..... | Bronxville, N. Y..... | Jan. 13, 1857. |
| 17410 | Axles, nuts on, securing..... | Thomas S. Williams, assignor to himself and Henry T. Hoyt..... | Philadelphia, Pa..... | May 26, 1857. |
| 18248 | Axles with friction-rollers, journals of | George A. Prentiss..... | Cambridge, Mass..... | Sept. 22, 1857. |
| 17999 | Boxes, receiving, for passengers' fares | John B. Slawson | New Orleans, La..... | July 26, 1857. |
| 18716 | Brake, railroad, automatic..... | Alfred F. Toulmin | Ellicott's Mills, Md..... | Nov. 27, 1857. |
| 18516 | Brake, railroad, operating | Phileander Perry..... | Troy, N. Y..... | Oct. 24, 1857. |
| 17008 | Car-brake, railroad | Richard L. Smith..... | Philadelphia, Pa..... | April 14, 1857. |
| 18018 | Car-brake, railroad | James Mitchell..... | Occola, Iowa..... | Aug. 18, 1857. |

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|-------|--|--|------------------------|-----------------|
| 18180 | Car-brake, railroad, automatic | W. R. Jackson | Baltimore, Md. | Sept. 8, 1857. |
| 17004 | Car-brakes, railroad | R. M. Wade | Wadeville, Va. | April 7, 1857. |
| 17257 | Car-brakes, railroad, bumper | Louis Brauer | Somerville, Tenn. | May 12, 1857. |
| 17933 | Car-brakes, railroad, mechanism for operating | E. R. Roe | Bloomington, Ill. | Aug. 11, 1857. |
| 17763 | Car-brakes, railroad, method of applying | Ira J. Webber | Salem, Mass. | July 7, 1857. |
| 18435 | Car-brakes, railroad, rubbers of | Henry M. Collier | Binghamton, N. Y. | Oct. 20, 1857. |
| 18990 | Car-coupling, railroad | John F. Rague | Dubuque, Iowa | Dec. 29, 1857. |
| 18132 | Car-coupling, railroad, reversible | Joseph Boothroyd | Michigan City, Ind. | Sept. 8, 1857. |
| 16654 | Car-couplings, railroad, self-disengaging | Joehua C. Price | New Philadelphia, Ohio | Feb. 17, 1857. |
| 17845 | Car-couplings, railroad | Wellington Prosser | Kendall, N. Y. | July 21, 1857. |
| 17796 | Car-doors, &c., seal for | D. W. Long | Baltimore, Md. | July 14, 1857. |
| 18743 | Car, dumping | George W. Hart | Aurora, Ind. | Dec. 1, 1857. |
| 18961 | Car, railroad, or carriage springs | George Douglass | Scranton, Pa. | Dec. 29, 1857. |
| 17794 | Car-seats, railroad | B. J. La Mothe | New York, N. Y. | July 14, 1857. |
| 18232 | Car-seats, railroad | J. H. Swan | New York, N. Y. | Sept. 23, 1857. |
| 18375 | Car-seats, railroad | Charles P. Bailey | Zanesville, Ohio | Oct. 13, 1857. |
| 18122 | Car-seats, railroad, head-rests for | William M. McCauley, assignor to J. N. McIntire. | Washington, D. C. | Sept. 1, 1857. |
| 16916 | Car-springs from mandrel, railway, machine for disengaging | Perry G. Gardiner | New York, N. Y. | Mar. 31, 1857. |
| 18515 | Car-springs, railroad | Henry M. Paine | Worcester, Mass. | Oct. 27, 1857. |
| 16915 | Car-springs, railway, machine for creasing plates for | Perry G. Gardiner | New York, N. Y. | Mar. 31, 1857. |
| 17443 | Car-wheels, cast-iron | A. L. Mowry | Cincinnati, Ohio | June 2, 1857. |
| 16851 | Car-wheels, casting. (See Class II, letter C.) | James M. Ross | Springfield, Mass. | Mar. 17, 1857. |
| 18752 | Car-wheels, railroad | A. B. Letta | Cincinnati, Ohio | Dec. 1, 1857. |
| 18767 | Car-wheels, railroad | Michael Phelan | Bridgewater, Pa. | Dec. 1, 1857. |
| 17250 | Car-wheels, railroad, wrought-iron plate | G. W. Allen | New York, N. Y. | May 12, 1857. |
| | Car-wheels, railway, casting. (See Class II, letter C.) | | | |
| 16724 | Car-wheels, railway, making tire for | James Evans | Portsmouth, Ohio | Mar. 3, 1857. |
| | Carriage-axles, lubricating. (See Class XII, letter L.) | | | |
| 17506 | Carriage-brakes | George Hancock | Mechanicsburg, Pa. | June 9, 1857. |
| 17376 | Carriage, horse and shafts from a, apparatus for discharging a | Gilbert Hubbard | Sandersfield, Mass. | May 26, 1857. |
| 18421 | Carriage, horse | J. W. Wiler, S. B. Sturges, and G. McFall. | Mansfield, Ohio | Oct. 19, 1857. |
| 17360 | Carriage-hubs | Sylvester W. Beach | Chicago, Ill. | May 26, 1857. |

X.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--------------------------------------|---------------------------|-----------------|
| 18893 | Carriage-hubs, band portions of, machine for turning the. | Zina Doolittle | Perry, Ga. | Dec. 22, 1857. |
| 17846 | Carriage-hubs, method of turning | Alexander Rickart | Schoharie, N. Y. | July 21, 1857. |
| 18854 | Carriage-prop | Chauncey Thomas | West Newbury, Mass. | Sept. 22, 1857. |
| 18451 | Carriage-shaft coupling. (See Shaft-coupling.) | Bold R. Hood | Clinton, N. C. | Oct. 20, 1857. |
| 18502 | Carriage-springs | Charles A. McElroy | Delaware, Ohio | Mar. 10, 1857. |
| 16986 | Carriage-springs, arrangement of | Rinehart P. March | Jeffersonville, Pa. | April 7, 1857. |
| 16919 | Carriage, steam | John S. Hall | Pittsburg, Pa. | Mar. 31, 1857. |
| 17690 | Carriage-top | R. S. Jennings | Waterbury, Conn. | June 30, 1857. |
| 16925 | Carriage-tops | R. S. Jennings | Waterbury, Conn. | Mar. 31, 1857. |
| 16467 | Carriage-tops, calash. | G. & D. Cook | New Haven, Conn. | Jan. 27, 1857. |
| 18992 | Carriage-tops, joints for | A. C. Shelton and Byron Tuttle | Plymouth, Conn. | Dec. 29, 1857. |
| 18568 | Carriage-tops, joints of | Reuben W. Stone | Solsville, N. Y. | Nov. 3, 1857. |
| 18106 | Carriage-tops, mode of adjusting | C. W. Saladee | Columbus, Ohio | Sept. 1, 1857. |
| 17520 | Carriage-wheel | James D. Sarven | Columbia, Tenn. | June 9, 1857. |
| 18097 | Carriage-wheels, hub for | James W. Jackson and L. W. Burchinal | Smithfield, Pa. | Sept. 1, 1857. |
| 18565 | Carriage-wheels, hubs of | Cornelius Merry | New York, N. Y. | Dec. 15, 1857. |
| 18556 | Carriage-wheels, tires on, mode of tightening | N. J. Skaggs | Talladega, Ala. | Nov. 3, 1857. |
| 18353 | Carriages | John W. Crannell | Olivet, Mich. | Jan. 6, 1857. |
| 17191 | Carriages, adjustable pole for | Sherlock H. Bishop | Orange, Conn. | May 5, 1857. |
| 16528 | Carriages, adjustable seats for | George & David Cook | New Haven, Conn. | Feb. 3, 1857. |
| 17638 | Carriages, central draught-joint of | Luther O. Rice | Castorville, Canada West. | June 23, 1857. |
| 17605 | Carriages, mode of constructing | Rufus Nutting | Randolph, Vt. | July 14, 1857. |
| 17337 | Carriages, running-gear of | Richard Murdoch | Baltimore, Md. | May 19, 1857. |
| 18403 | Carriages, shafts and poles to, mode of fastening. | Thomas Miller | Worcester Township, Penn. | Oct. 13, 1857. |
| 17970 | Carriages, steam, steering-apparatus of | Edward C. Jones | Pittsburg, Penn. | Aug. 11, 1857. |
| 18153 | Carriages, wear-iron for | J. George Lefler | Philadelphia, Penn. | Sept. 8, 1857. |
| 18781 | Cars and carriages by horse-power, propelling | Henry G. Vanderwerken | Greenbush, N. Y. | Dec. 1, 1857. |
| 17793 | Cars, hand, applying fly-wheels to | Charles T. Klipp and John Lawrenson | New York, N. Y. | July 14, 1857. |
| 16762 | Cars, railroad, guide-wheels for | John B. Wickenham | New York, N. Y. | Mar. 3, 1857. |

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|-------|---|---|----------------------------|-----------------|
| 18884 | Cars, railroad, journal-boxes for..... | Robert McWilliams, assignor to himself and Adam J. Frederick. | Philadelphia, Penn | Dec. 15, 1857. |
| 18806 | Cars, railroad, method of preventing dust, &c., from entering the windows of..... | Philip M. Pyfer..... | Baltimore, Md | Mar. 10, 1857. |
| 17114 | Cars, railroad, mode of dumping..... | William Pearce and John Lowrie | Piedmont, Va. | April 21, 1857. |
| 17963 | Cars, railroad, pedestal for..... | D. H. Feger, assignor to himself and Daniel Shepherd. | New York, N. Y. | Aug. 4, 1857. |
| 16520 | Cars, railroad, safety-coupling for..... | Edward H. Anderson..... | Milford, Del | Feb. 3, 1857. |
| 18950 | Cars, railroad, springs for..... | John C. Blair..... | Pittsburg, Penn | Dec. 29, 1857. |
| 16884 | Cars, railroad, steam-brakes for..... | Theophilus E. Sickels | Kennett Square, Penn | Mar. 24, 1857. |
| 17982 | Cars, railway, safety-tops for..... | Albert Potts..... | Philadelphia, Penn | Aug. 11, 1857. |
| 17801 | Cars, &c., railroad freight, seal for..... | Henry D. Meers and William Houlton, jr..... | Baltimore, Md | July 14, 1857. |
| 17802 | Cars, &c., railroad freight, seal for..... | Henry D. Meers and William Houlton, jr..... | Baltimore, Md | July 14, 1857. |
| 18400 | Cars, &c., railroad, implement for sealing..... | F. W. A. Krause..... | Baltimore, Md | Oct. 13, 1857. |
| 19984 | Cars, &c., railroad, journal-boxes for..... | James A. Norris..... | Philadelphia, Penn | Dec. 29, 1857. |
| 17486 | Cait, self-loading..... | J. S. Brown..... | Washington, D. C. | June 9, 1857. |
| 18519 | Chair, railroad..... | John S. Robinson, Levi Hereindeen, and George Sheldon. | Canandaigua, N. Y. | Oct. 27, 1857. |
| 17773 | Chairs, railroad, machine for making..... | Robert Archer..... | Richmond, Va | July 14, 1857. |
| 16813 | Coaches, tongues of, mode of supporting the..... | Zalmon B. Wakeman..... | Beloit, Wis | Mar. 10, 1857. |
| 18408 | Felloes in wheels, mode of tightening..... | Augustus Stoner..... | Mount Joy, Penn | Jan. 13, 1857. |
| 18998 | Head-rests..... | Eliaha Waters..... | Troy, N. Y | Dec. 29, 1857. |
| 17206 | Omnibus-coffer..... | Joseph T. Curtis..... | New York, N. Y | May 5, 1857. |
| 18615 | Railroads, revolving snow-excavators for..... | Jesse Urmv..... | Wilmington, Del | Nov. 10, 1857. |
| 17751 | Shaft-coupling..... | Edwin F. Shoenberger..... | Germanatown, Penn | July 10, 1857. |
| 16577 | Sleighs, attaching thills to, mode of..... | J. M. Batchelor..... | Foxcroft, Me | Feb. 10, 1857. |
| 17232 | Sleights and cutters | Levi B. Randall..... | Penn Yan, N. Y | May 5, 1857. |
| 18682 | Snow-plough | Newcomb Demary, jr., assignor to James Yates. | Attica, N. Y | Dec. 16, 1857. |
| 18903 | Snow-plough, railroad..... | Andrew Hotchkiss..... | Sharon Valley, Conn..... | Dec. 22, 1857. |
| 17314 | Truck, hand..... | Z. Butt..... | Lincolnton, N. C | May 19, 1857. |
| 18865 | Vehicles, bracing-springs of..... | C. W. Saladee..... | Columbus, Ohio | Dec. 15, 1857. |
| 17358 | Vehicles, construction of..... | Charles Atkinson and G. S. Manning..... | Dauville, Ill | May 26, 1857. |
| 17918 | Vehicles, coupling of thills to..... | G. S. Manning..... | Springfield, Ill | Aug. 4, 1857. |
| 18426 | Vehicles, detaching horses from, mode of..... | S. T. J. Coleman and J. W. Sibbet..... | Cincinnati, Ohio | Oct. 13, 1857. |
| 18625 | Vehicles, springs for, arrangement of..... | W. D. Mayfield, assignor to himself and S. D. Porter. | Bloomington, Ill | Feb. 10, 1857. |
| | | Darius Babcock, assignor to himself and Thomas Harrop. | Hornor, N. Y | |

X.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|-----------------------------|---------------------------|-----------------|
| 18077 | Vehicles, two-wheeled, thills for..... | Phillipe Baillau | New York, N. Y. | Sept. 1, 1857. |
| 18386 | Wagon-brake | M. C. Chamberlin | Johnsontown, N. Y. | Oct. 13, 1857. |
| 17493 | Wagon-brake, self-acting | M. C. Chamberlin | Johnsontown, N. Y. | June 9, 1857. |
| 17369 | Wagon-couplings | W. D. Guseman | Morgantown, Va. | May 26, 1857. |
| 18438 | Wagon, dumping | M. Y. and T. J. Coppe | Centredridge, Penn. | Oct. 20, 1857. |
| 18431 | Wagon-wheels, mode of constructing the tires of..... | John S. Blinn | Austin, Texas. | Oct. 20, 1857. |
| 17700 | Wagons, brake for..... | Hugh Slater | Auburn, N. Y. | June 30, 1857. |
| 16523 | Wagons, couplings for..... | Jacob Boyers | Grundville, Va. | Feb. 3, 1857. |
| 18648 | Wagons, gearing for..... | Edgar Huseon | Ithaca, N. Y. | Feb. 17, 1857. |
| 18242 | Wagons, loading logs on, apparatus for..... | Philander Gilbert | Alexandria, Ohio | Sept. 22, 1857. |
| 18448 | Wheelwright-machine | Chauncey H. Guard | Brownsville, N. Y. | Oct. 20, 1857. |
| 17509 | Wheelwright's-machine | E. N. Kilpatrick | Byhalia, Miss. | June 9, 1857. |
| 18138 | Wheels, carriage, tires of, mode of tightening..... | James M. Dick | Buffalo, N. Y. | Sept. 8, 1857. |
| 17532 | Wheels, setting tires on, machine for..... | John H. Williams | Pleasant Hill, Ohio | June 9, 1857. |
| 17668 | Whiffle-tree hook..... | Anthony Cooley | Paw Paw, Mich. | June 30, 1857. |
| 17752 | Whiffle-trees..... | David A. Smith | Washington, D. C. | July 7, 1857. |

CLASS XI.—HYDRAULICS AND PNEUMATICS, including water-wheels, wind-mills, and other implements operated on by air or water, or employed in the raising and delivery of fluids.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|-------------------------|-----------------|
| 18645 | Air-blast, generating, method of..... | Isalah J. Hendrix | Troy, N. Y. | Feb. 17, 1857. |
| 17664 | Blast-blower | Joseph Braugh | Aurora, Ill. | June 30, 1857. |
| 16736 | Cock, basin | Robert Leitch | Baltimore, Md. | Mar. 3, 1857. |
| 17539 | Cocks, basin, &c., valvular arrangement for..... | E. G. Burnham, assignor to himself and Henry A. Chaplin. | Springfield, Mass. | June 9, 1857. |

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|-------|--|---|------------------------|---|
| 17433 | Faucet..... | L. J. Knowles | Warren, Mass..... | June 2, 1857. |
| 17604 | Faucet..... | D. N. B. Coffin, jr., assignor to Boston Faucet Company. | Boston, Mass..... | June 16, 1857. |
| 17942 | Faucet, basin | Erastus Stebbins | Chilcopee, Mass..... | May 19, 1857. |
| 17511 | Faucet, basin | William C. Marshall and Horace W. Smith. | Hartford, Conn..... | June 9, 1857. |
| 18091 | Faucets, device for locking..... | Henry Getty | Brooklyn, N. Y..... | Sept. 1, 1857. |
| 17074 | Faucets, waste way in..... | James E. Boyle | Richmond, Va..... | April 21, 1857. |
| 17973 | Faucets, &c., valvular arrangement in..... | John C. Macdonald | Cincinnati, Ohio..... | Aug. 11, 1857. |
| 17987 | Filter..... | John A. Thompson | Cayuga, N. Y..... | Aug. 11, 1857. |
| 18031 | Filter..... | William W. Ayres | Worcester, Mass..... | Aug. 25, 1857. |
| 17028 | Filtering liquids, apparatus for..... | Benjamin N. DeBuffon | Paris, France..... | April 14, 1857; Eng- land, May 3, 1856. |
| 16330 | Filters, method of attaching, to supply-pipes..... | James Fernald | Boston, Mass..... | Jan. 6, 1857. |
| 18595 | Fire-plugs..... | Lucien Moss | Philadelphia, Pa..... | Nov. 10, 1857. |
| 16810 | Fluid gates or faucets..... | Jared W. Smith | Hartford, Conn..... | Mar. 10, 1857. |
| 16945 | Fluid-meter..... | James Cochrane | New York, N. Y..... | Mar. 31, 1857; Eng- land, Nov. 19, 1855. |
| 17127 | Fluid-meter..... | Samuel J. Burr, assignor to himself and Henry F. Read | Brooklyn, N. Y..... | April 21, 1857. |
| 17443 | Fluid-meter..... | James R. Maxwell | Cincinnati, Ohio..... | June 2, 1857. |
| 17394 | Gaseous bodies, machinery for compressing..... | William A. Royce | Newburgh, N. Y..... | May 26, 1857. |
| 16450 | Hose-coupling..... | L. D. Phillips | Chicago, Ill..... | Jan. 20, 1857. |
| 16448 | Hose-pipe, coating. (See Class IV, letter C.) | James G. Morgan | Brooklyn, N. Y..... | Jan. 20, 1857. |
| 16536 | Hydrant..... | W. Fields and S. Gerhard | Wilmington, Del..... | Feb. 3, 1857. |
| 17093 | Hydrant..... | A. Hoegland | Jersey City, N. J..... | April 21, 1857. |
| 17415 | Hydrant..... | William W. Binny | Sauca Falls, N. Y..... | June 2, 1857. |
| 17522 | Hydrant..... | Joel Bryant | Brooklyn, N. Y..... | June 16, 1857. |
| 17632 | Hydrant..... | George P. Perrine and James E. Boyle | Richmond, Va..... | June 23, 1857. |
| 17598 | Hydrants, incasing, method of..... | William Bramwell, assignor to Samuel P. Ayres. | New York, N. Y..... | June 9, 1857. |
| 17447 | Hydraulic blast-generator..... | August F. W. Parts | New York, N. Y..... | June 2, 1857. |
| 18280 | Hydraulic engine..... | John D. Heaton | Dixon, Ill..... | Sept. 29, 1857. |
| 16756 | Hydraulic engines, supply and discharge valves of, method of operating the. | Homer H. Stuart | New York, N. Y..... | Mar. 3, 1857. |
| 16801 | Hydraulic jack..... | George Lindsay | New York, N. Y..... | Mar. 10, 1857. |
| 18912 | Hydraulic valve..... | A. R. Ketcham | Buffalo, N. Y..... | Dec. 22, 1857. |
| 17393 | Hydro-dynamic machine for testing strength of materials. | Francis C. Lowthorp | Trenton, N. J..... | May 26, 1857. |

XI.—List of patents for inventions, 1857.

| No | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|---------------------|---------------------------------------|
| 16983 | Liquid-meter | Otto G. Leopold | Cincinnati, Ohio | April 7, 1857. |
| 17073 | Liquors on tap, method of excluding air from | A. F. Boyd | Zanesville, Ohio | April 21, 1857. |
| 16588 | Pump | Ambrose Tower | New York, N. Y. | Feb. 3, 1857; England, July 23, 1856. |
| 16785 | Pump, lifting, converting a, into a section or forcing pump, or <i>vis versa</i> . | John F. Brickley | Winchester, Ind. | Mar. 10, 1857. |
| 18705 | Pump-packings | Washburn Race | Seneca Falls, N. Y. | Nov. 24, 1857. |
| 17516 | Pump, rotary | Robert Ramsden | South Easton, Pa. | June 9, 1857. |
| 17423 | Pumping apparatus, steam | George H. Corliss | Providence, R. I. | June 2, 1857. |
| 18718 | Pumping engines, steam | John S. Borden, assignor to himself and Aaron W. Rockwood. | New Haven, Conn. | Nov. 24, 1857. |
| 16366 | Pumps | G. W. B. Gedney | New York, N. Y. | Jan. 6, 1857. |
| 16373 | Pumps | James S. Burnham | Yorkville, N. Y. | Jan. 13, 1857. |
| 17327 | Pumps | Silas Hewitt | Seneca Falls, N. Y. | May 19, 1857. |
| 17625 | Pumps | William H. Harrison | Philadelphia, Pa. | June 23, 1857. |
| 17768 | Pumps | Henry Pease, assignor to himself, Eckler, Buswell, & Co. | Brockport, N. Y. | July 7, 1857. |
| 17820 | Pumps | Birdsall Holly, assignor to Silaby, Myn-ders, & Shoemaker. | Seneca Falls, N. Y. | July 14, 1857. |
| 18309 | Pumps | J. D. West | New York, N. Y. | Sept. 29, 1857. |
| 18559 | Pumps | Noah Sutton | New York, N. Y. | Nov. 5, 1857. |
| 18870 | Pumps | Harmon A. Sheldon | Middlebury, Vt. | Dec. 15, 1857. |
| 18916 | Pumps | Hoses Lindsey | Ashville, N. C. | Dec. 22, 1857. |
| 19003 | Pumps | Francis G. Wynkoop. | Corning, N. Y. | Dec. 29, 1857. |
| 17653 | Pumps, air, chambers to, method of attaching | Charles N. Lewis, assignor to George C. King. | Seneca Falls, N. Y. | June 23, 1857. |
| 17154 | Pumps, atmospheric | Levi Keller | Cattawlesque, Pa. | April 28, 1857. |
| 16603 | Pumps, chain | Edmund Morris | Trenton, N. J. | Feb. 10, 1857. |
| 17217 | Pumps, chain | James Harrison, Jr. | New York, N. Y. | May 5, 1857. |
| 16875 | Pumps, rotary | George W. Griswold | Carbondale, Pa. | Mar. 24, 1857. |
| 16869 | Pumps, rotary | Abel Barker | Honesdale, Pa. | Mar. 24, 1857. |
| 16974 | Pumps, rotary | Richard Gilbert | Rochester, N. Y. | April 7, 1857. |

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|-------|--|---|--------------------------|-----------------|
| 18488 | Pumps, rotary..... | Henry Pease, assignor to Eckler, Buswell, & Co. | Brockport, N. Y..... | Oct. 20, 1857. |
| 18986 | Pumps, rotary..... | Oliver Palmer..... | Buffalo, N. Y..... | Dec. 29, 1857. |
| 19004 | Pumps, rotary..... | William A. Young..... | Charlotte, N. C..... | Dec. 29, 1857. |
| 18666 | Pumps, ships'. (See Class VII, letter S.) Pumps, ventilating attachment to be applied to. | Charles N. Lewis, assignor to himself and G. C. King. | Seneca Falls, N. Y..... | Nov. 17, 1857. |
| 17009 | Pumps, working, method of..... | William Wright..... | Hartford, Conn..... | April 7, 1857. |
| 17198 | Stuffing-boxes..... | N. R. Bates..... | New York, N. Y..... | May 5, 1857. |
| 17503 | Valves, puppet, method of guiding and cushioning..... | Joseph Hyde and William Stearns..... | Wilmington, Del..... | June 9, 1857. |
| 17401 | Valves, safety, thermo-pneumatic..... | S. H. Whitaker and Ezra Cope..... | Cincinnati, Ohio..... | May 26, 1857. |
| 17634 | Valvular arrangement for faucets, &c..... | Edward Hamilton..... | Chicago, Ill..... | June 23, 1857. |
| 18842 | Water, lifting, machinery for..... | Isaac C. Foster..... | Union city, Tenn..... | Dec. 15, 1857. |
| 17654 | Water-meter..... | Peter H. Niles, assignor to himself and Alfred Douglas, Jr. | Boston, Mass..... | June 23, 1857. |
| 17593 | Water, method of elevating, by compressed air. | Archibald Thomson..... | Detroit, Mich..... | June 16, 1857. |
| 18293 | Water, oily matter from, apparatus for separating..... | James Naughton..... | Cincinnati, Ohio..... | Sept. 29, 1857. |
| 17388 | Water, raising, apparatus for, valvular arrangement in..... | Andrew Nicol..... | Carbondale, Pa..... | May 19, 1857. |
| 16669 | Water, raising, method of..... | Daniel K. Winder..... | Cincinnati, Ohio..... | Feb. 17, 1857. |
| 16686 | Water, supplying the upper stories of houses with, apparatus for..... | James Hanson..... | New York, N. Y..... | Feb. 24, 1857. |
| 16881 | Water-wheel..... | Samuel Reynolds..... | Oswego, N. Y..... | Mar. 24, 1857. |
| 17426 | Water-wheel..... | Reuben Daniels..... | Woodstock, Vt..... | June 2, 1857. |
| 18507 | Water-wheel..... | William Henley..... | New Salem, N. C..... | Oct. 27, 1857. |
| 16432 | Water-wheel, centre-vent..... | E. G. Cushing..... | Dryden, N. Y..... | Jan. 20, 1857. |
| 17119 | Water-wheel, current..... | T. Stamp..... | Wetumpka, Ala..... | April 21, 1857. |
| 17041 | Water-wheels, adjustable buckets to the shafts of, method of attaching..... | J. R. Howell..... | Alexandria, Va..... | April 14, 1857. |
| 16466 | Water-wheels, direct horizontal, method of inserting the buckets in the shafts of..... | Tenison Cheever..... | Middleburg, Ohio..... | Jan. 27, 1857. |
| 17726 | Water, &c, flow of, through pipes, chamber to effect uniformity of..... | Thomas Clark..... | Philadelphia, Pa..... | July, 7, 1857. |
| 16536 | Wells, raising water from, self-operating device for tilting buckets in..... | D. P. Farnham..... | Milton, Wis..... | Feb. 8, 1857. |
| 16975 | Wheel, current and paddle..... | James H. Hanchett..... | Beloit, Wis..... | April 7, 1857. |
| 17246 | Wheels, turbine, method of operating the gate of..... | L. M. Wright..... | Niagara Falls, N. Y..... | May 5, 1857. |

XI.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentee. | Residence. | Date of patent. |
|-------|--|---------------------------|--------------------------------------|--|
| 17168 | Wind-mill..... | Rufus Nutting..... | Randolph, Vt..... | April 28, 1857. |
| 18368 | Wind-mill..... | William Zimmerman..... | Quincy, Ill..... | Oct. 6, 1857. |
| 16492 | Wind-mill, self-regulating..... | John M. May..... | Janeville, Wis..... | Jan. 27, 1857. |
| 16943 | Wind-mills, sails or vanes of, method of feathering the..... | J. C. & T. G. Wilson..... | Cedar Hill, Texas..... | Mar. 31, 1857. |
| 16946 | Wind-mills, self-regulating wind indicator for..... | Henry S. Wentworth..... | Napoleon, Mich..... | Jan. 6, 1857. |
| 17862 | Wind-mills, &c., governor for regulating the work of..... | Ethan Allen..... | Worcester, Mass..... | July 28, 1857. |
| 17384 | Wind-wheel..... | James Mitchell..... | Woodfield, Ohio..... | May 26, 1857. |
| 16816 | Wind-wheel, self-adjusting..... | Edward A. Tuttle..... | Brooklyn, N. Y..... | Feb. 10, 1857. |
| 16218 | Wind-wheel, self-regulating..... | Abner P. Wilson..... | Solon, Ill..... | Mar. 10, 1857. |
| 16378 | Wind-wheels, automatic regulator for..... | Joseph Dunkley..... | Carrolton, Mo..... | Jan. 18, 1857; reissued Aug. 26, 1857. |
| 16723 | Wind-wheels, method of suspending, in self-revolving adjusting frames..... | Joseph De Sendinr..... | South Oyster Bay, N. Y..... | Mar. 3, 1857. |
| 16993 | Wind-wheels, sails of, mode of regulating velocity and furling the..... | F. W. Witting..... | Twelve Mile Colett's Gln, Texas..... | Mar. 24, 1857. |
| 18440 | Wind-wheels, vane for..... | Jesse M. Clock..... | Atlanticville, N. Y..... | Oct. 20, 1857. |
| 16895 | Wind-wheels, velocity of, method of regulating..... | A. W. Wood..... | Milwaukee, Wis..... | Mar. 24, 1857. |
| 18210 | Wind-wheels, velocity of, method of regulating the..... | Francis Peabody..... | Salem, Mass..... | Sept. 15, 1857. |

CLASS XII.—LEVER, SCREW, AND OTHER MECHANICAL POWER, as applied to pressing, weighing, raising, and moving weights.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|---------------------------|--------------------------------------|
| 18390 | Balance for detecting counterfeit coin..... | H. Maranville..... | Clinton, Ohio..... | Jan. 13, 1857. |
| 17252 | Balances, self-indicating..... | Otis and Z. W. Avery..... | Bethany, Pa..... | May 12, 1857. |
| 18973 | Balances for detecting counterfeit money..... | Ferdinand J. Herpers..... | Newark, N. J..... | Dec. 29, 1857. |
| 17485 | Band-fastening, metallic, for bales, &c..... | Asa O. Broad..... | Louisville, Ky..... | June 9, 1857. |
| 18614 | Bands for cotton-bales, &c., metallic fastening for. | William Minor..... | Honola, La..... | Oct. 27, 1857. |
| 18299 | Bands of cotton-bales, &c., metallic fastening for. | Charles J. Provost..... | Sardis, Ala..... | Sept. 29, 1857. |
| 17034 | Bucket, hoisting, for coal, &c..... | George Focht..... | Reading, Pa..... | April 14, 1857. |
| 16501 | Cans, oil..... | Isaac Van Hagen..... | New York, N. Y..... | Jan. 27, 1857. |
| 17124 | Cans, oil..... | Hiram Wells..... | Florence, Mass..... | April 21, 1857. |
| 17810 | Cans, oil..... | George W. and George H. Simmons..... | Bennington, Vt..... | July 14, 1857. |
| 18949 | Cans, oil..... | Joseph F. Barendorf..... | Paris, France..... | Dec. 29, 1857; France, May 21, 1856. |
| 18353 | Elevators, extension..... | Pierce Porter..... | Hooksett, N. H..... | Oct. 6, 1857. |
| 17289 | Elevators, grain, clearing-guard of..... | George Mann, jr..... | Ottawa, Ill..... | May 12, 1857. |
| 18575 | Hoisting-apparatus for bricks, &c..... | John Crawshaw..... | Rochester, N. Y..... | Nov. 10, 1857. |
| 18540 | Hoisting-buckets..... | George Focht..... | Reading, Pa..... | Nov. 3, 1857. |
| 17536 | Hoops, cheese..... | C. P. S. Wardwell..... | Lake Village, N. H..... | June 9, 1857. |
| 18779 | Hoops, metallic, clasps for..... | James R. Speer..... | Pittsburg, Pa..... | Dec. 1, 1857. |
| 17024 | Jack, lifting..... | John S. Cheanut..... | Philadelphia, Pa..... | April 14, 1857. |
| 17027 | Jack, lifting..... | Robert W. and Daniel Davis..... | Yellow Springs, Ohio..... | April 14, 1857. |
| 17344 | Jack, lifting..... | William Thomas..... | Hingham, Mass..... | May 19, 1857. |
| 17557 | Jack, lifting..... | Heber G. Seekins and Charles H. Goss..... | Elyria, Ohio..... | July 7, 1857. |
| 18692 | Jack, lifting..... | Lucius J. Knowles..... | Warren, Mass..... | Nov. 10, 1857. |
| 18955 | Jack, lifting..... | John Callagan..... | Stroud Glades, Va..... | Dec. 29, 1857. |
| 18760 | Jacks, lifting..... | David L. Miller..... | Madison, N. J..... | Dec. 1, 1857. |
| 18364 | Lubricating carriage-axles..... | Albert A. Vedder..... | Lysander, N. Y..... | Oct. 6, 1857. |
| | Lubricating fire-arms, mode of. (See Class XIX, letter F.) | | | |
| 18863 | Lubricating oil-cups..... | Enoch N. Roland..... | Baltimore, Md..... | Dec. 15, 1857. |
| 18671 | Lubricating under pressure, method of..... | J. D. Custer..... | Norristown, Pa..... | Mar. 24, 1857. |

XII.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|---------------------------|---|
| 16553 | Lubricator | Norman W. Pomeroy | Meriden, Conn | Feb. 3, 1857. |
| 17118 | Lubricator | Hiram Strait | Covington, Ky | April 21, 1857. |
| 17322 | Lubricator | Henry J. Hawkins | Mobile, Ala | July 14, 1857. |
| 17957 | Lubricator, automatic, for railroad car-axes | William Baker | Utica, N. Y | Aug. 11, 1857. |
| 17972 | Lubricator, automatic, for railroad car-axes | A. B. Latta | Cincinnati, Ohio | Aug. 11, 1857. |
| 16796 | Lubricators for steam-engine cylinders | John Henwood | New York, N. Y | Mar. 10, 1857. |
| 18323 | Packing wool, machine for | Charles Carlisle | Woodstock, Vt | Oct. 6, 1857. |
| 18328 | Packing wool, machine for | Albert Dorr | Orleans, Mich | Oct. 6, 1857. |
| 18004 | Press, drop | William Wilson, jr., assignor to Wilson, Green, & Wilson, jr. | Brandywine, Del | Aug. 11, 1857. |
| 17978 | Press, filtration, for expressing liquids from substances | William Needham and James Kite | Vauxhall, England | Aug. 11, 1857. |
| 16391 | Press, oil | William W. Marsh | Jacksonville, Ill | Jan. 13, 1857. |
| 18502 | Press, steam cotton | T. J. De Yampert | Mobile, Ala | Oct. 27, 1857. |
| 18364 | Press, steam cotton | John Roy | New Orleans, La | Dec. 22, 1857. |
| 18395 | Press, wine and cider | John Eberweiser | Cincinnati, Ohio | Dec. 22, 1857. |
| 16389 | Presses | Radolphus Kinsley | Springfield, Mass | Jan. 13, 1857. |
| 18362 | Presses, cheese | C. H. Robertson | Middleport, N. Y | Dec. 15, 1857. |
| 16494 | Presses, cotton | M. L. Parry | Galveston, Tex | Jan. 27, 1857. |
| 18995 | Presses, cotton | Riley Smith | Towanda, Pa | Dec. 29, 1857. |
| 18766 | Presses, cotton and hay | G. W. Penniston | North Vernon, Ind | Dec. 1, 1857. |
| 18354 | Presses, cotton and hay | James Massey | Thomasville, Ga | Dec. 15, 1857. |
| 17053 | Presses, cotton, self-releasing doors of | George W. Penniston | North Vernon, Ind | April 14, 1857. |
| 17411 | Presses, drop | Milo Peck | New Haven, Conn | May 26, 1857. |
| 17378 | Presses for cotton, &c | Henry Hughes | Port Gibson, Miss | May 12, 1857. |
| 17161 | Presses, oil, securing and guiding the boxes of | William W. Marsh | Jacksonville, Ill | April 28, 1857. |
| 17108 | Presses, &c., hay, method of securing the doors of | Cornelius Martlatt | New Baltimore, N. Y | April 31, 1857. |
| 16422 | Pressing, ell, machinery | William Wilber | New Orleans, La | Jan. 13, 1857; Eng-land, June 13, 1858. |
| 18367 | Pressing, oil, machinery | William Wilber | New York, N. Y | Oct. 6, 1857. |

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|-------|--|--------------------------|------------------------|---|
| 16381 | Scales, platform..... | Thaddeus Fairbanks | St. Johnsbury, Vt..... | Jan. 13, 1857; re- sued Mar. 31, 1857. |
| 17290 | Weighing-machines, automatic grain, buckets of. | Rufus Porter..... | Washington, D. C..... | May 6, 1857; re- sued Dec. 22, 1857. |

CLASS XIII.—GRINDING-MILLS AND MILL-GEARING, including grain-mills, mechanical movements, horse-power, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|---------------------------|-----------------|
| 18753 | Banding, machine | Charles Lensmann..... | Brooklyn, N. Y..... | Dec. 1, 1857. |
| 17743 | Belt-shifter for machinery | Ludius J. Knowles..... | Warren, Mass..... | July 7, 1857. |
| 17316 | Beltting, india-rubber, machine for making | Robert Hale..... | Roxbury, Mass..... | May 6, 1857. |
| 18650 | Beltting, machine, fastening for..... | Lewis Smith..... | Buffalo, N. Y..... | Nov. 17, 1857. |
| 18941 | Beltting, mode of | Benjamin Chester, assignor to W. H. Burnap..... | New York, N. Y..... | Dec. 23, 1857. |
| 18179 | Bolt, flour..... | N. Baumann..... | Elmore, Ill..... | Sept. 16, 1857. |
| 17126 | Bolting-cloths to reels, mode of attaching | John Woodville..... | Chillicothe, Ohio..... | April 21, 1857. |
| 16748 | Clutch, centrifugal friction | Bennselaar Reynolds..... | Stockport, N. Y..... | Mar. 3, 1857. |
| | Governor for water, steam, and other power. (See Class VI, letter G.) | | | |
| 18926 | Governors for machinery..... | George M. Phelps..... | Troy, N. Y..... | Dec. 22, 1857. |
| 17325 | Grain-cleaning, machines for | J. R. Gates..... | Eckmanville, Ohio..... | May 19, 1857. |
| 17363 | Grain-scourers and separators | Samuel Canby..... | Ellicott's Mills, Md..... | May 26, 1857. |
| 16439 | Grain-separators..... | George Hoebeling..... | Quincy, Ill..... | Jan. 20, 1857. |
| 16471 | Grain-separators..... | Michael Decamp..... | South Bend, Ind..... | Jan. 27, 1857. |
| 17498 | Grain-separators..... | Elkin Doud..... | Oshkosh, Wis..... | June 9, 1857. |
| 17798 | Grain-separators..... | Amasa Curtis..... | Lena, Ill..... | July 7, 1857. |
| 17853 | Grain-separators..... | William Zimmermann..... | Quincy, Ill..... | July 21, 1857. |
| 18761 | Grain-separators..... | John R. Moffitt..... | St. Louis, Mo..... | Dec. 1, 1857. |
| 18444 | Grain-separators, screens for..... | Abram Gear..... | Richmond, Ind..... | Oct. 20, 1857. |
| 18137 | Grain, &c., drying machine for..... | Christian Custer..... | Philadelphia, Pa..... | Sept. 8, 1857. |
| | Hominy-machines. (See Class XXII.) | | | |
| 17966 | Hominy-mills..... | J. B. Gowdy and J. A. Welsh..... | Xenia, Ohio..... | Aug. 11, 1857. |
| 18233 | Horse-power..... | George E. Burt and Abram & George F. Wright..... | Harvard, Mass..... | Sept. 23, 1857. |

XIII.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|-------------------------|-----------------|
| 16612 | Horse-powers, attaching the arms of | Cyrus Roberts | Belleville, Ill. | Feb. 10, 1857. |
| 18028 | Horse-powers, portable. | Daniel Woodbury | Rochester, N. Y. | Aug. 18, 1857. |
| 17706 | Journal-boxes for shafting, &c., manufacture of. | Daniel Taylor, assignor to himself and H. A. Chambers. | Carbondale, Pa. | June 30, 1857. |
| 17333 | Journals of shafts, axles, &c., friction-rollers for. | William H. Main | Litchfield, Ohio. | May 19, 1857. |
| 18734 | Mechanical movements for regulating the action of a fly-wheel on the working parts of machinery connected with it. | Abram C. Frederick | Clarendon, N. Y. | Dec. 1, 1857. |
| 16847 | Mill, cider, convertible. | Samuel Males | Cincinnati, Ohio. | Mar. 17, 1857. |
| 16988 | Mill, corn and cob. | Richard F. Maynard | Baltimore, Md. | April 7, 1857. |
| 18844 | Mill, corn and cob. | Harvey Hall | Mansfield, Ohio. | Dec. 15, 1857. |
| 18274 | Mill, flouring, distributing apparatus in | James M. Clark | Lancaster, Pa. | Nov. 10, 1857. |
| 16325 | Mill, grinding. | James Culbertson | Covington, Ky. | Jan. 6, 1857. |
| 17619 | Mill, grinding. | Erna Coleman | Philadelphia, Pa. | June 23, 1857. |
| 18178 | Mill, grinding. | Aaron Arnold | Troy, N. Y. | Sept. 15, 1857. |
| 18610 | Mill, grinding. | Charles Tripp | Ann Arbor, Mich. | Nov. 10, 1857. |
| 18923 | Mill, grinding. | J. R. Morrison | East Springfield, Ohio. | Dec. 22, 1857. |
| 16583 | Mill, grinding, flour-bolt as applied to. | Sanford E. Fitch and Theodore Sharp. | Greenbush, N. Y. | Jan. 13, 1857. |
| 18637 | Mill, grinding, flour-distributing bolt for. | W. W. Hamer | Cincinnati, Ohio. | Nov. 17, 1857. |
| 18412 | Mill-shafting, &c., elastic coupling for. | William S. Reeder | St. Louis, Mo. | Oct. 18, 1857. |
| 18234 | Mill-stone drivers, bearings for. | Edwin Clark | Lancaster, Pa. | Sept. 22, 1857. |
| 18741 | Mill-stones, balance-iron for. | Joseph H. Glover | Skeggs's Creek, Ky. | Dec. 1, 1857. |
| 18848 | Mill-stones, dress of. | Nelson Hayward | Cleveland, Ohio. | Dec. 15, 1857. |
| 16616 | Mill-stones, facing of, instruments for facilitating the. | B. D. Sanders | Holliday's Cove, Va. | Feb. 10, 1857. |
| 17446 | Mill-stones, feeding grain to. | M. & C. Painter | Owling's Mills, Md. | June 2, 1857. |
| 18191 | Mill-stones, hanging. | Edwin Clark | Lancaster, Pa. | Sept. 15, 1857. |
| 17421 | Mill-stones, method of hanging. | W. A. Clark, S. D. Porter, and W. D. Simpson. | St. Louis, Mo. | June 2, 1857. |
| 17326 | Mill-stones, redressing, machines for. | W. Y. Gill | Henderson, Ky. | May 19, 1857. |
| 18993 | Mills, cider. | H. O. Sheldley | Republic, Ohio. | Dec. 29, 1857. |

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|-------|--|--|-------------------------|---|
| 17667 | Mills, flouring, distributing apparatus for | A. T. Clark..... | Lancaster, Pa | June 30, 1857; re- issued Aug. 4, 1857. |
| 16508 | Mills for tempering oleaginous seeds | William Wilber | New Orleans, La | Jan. 27, 1857; Eng- land, June 12, 1856. |
| 17985 | Mills, grain, dress of, grinding-surfaces for..... | Otis W. Stanford | Cincinnati, Ohio | Aug. 11, 1857. |
| 17116 | Mills, grinding..... | E. Ripley..... | Troy, N. Y..... | April 21, 1857. |
| 18163 | Mills, grinding..... | William Stauffer..... | Middlebury, Ind..... | Sept. 8, 1857. |
| 18985 | Mills, grinding..... | Franklin Olds..... | Providence, R. I..... | Dec. 29, 1857. |
| 18987 | Mills, sectional, corn and cob, securing the legs of..... | Richard F. Maynard | Baltimore, Md..... | April 7, 1857. |
| 17995 | Mills, winnowing..... | Manasseh Grouer, assignor to himself and H. H. Seely..... | Clyde, Ohio | Aug. 11, 1857. |
| 18006 | Mills, &c., tubular shafting for | Z. Allen..... | Providence, R. I..... | Aug. 18, 1857. |
| 17555 | Motion for preserving rolling contact, &c..... | George P. Gordon and Frederick O. De- gener..... | New York, N. Y..... | June 16, 1857. |
| 17222 | Motion, transmitting | Matthaus Kaefer | Alexandria, Pa | May 5, 1857. |
| 18496 | Rice, crushing, machine for | O. I. Butts | Georgetown, S. C | Oct. 27, 1857. |
| 18374 | Rice, cleaning, machine for | Wilson Ager | Rohrburg, Pa..... | Oct. 13, 1857. |
| 17646 | Rice, cleaning, machines for | John F. Taylor..... | Charleston, S. C | June 23, 1857. |
| 17882 | Rice, cleaning, machines for | P. R. Lachloote and T. B. Bowman | Charleston, S. C | July 28, 1857. |
| 18177 | Rice, cleaning, machines for | Wilson Ager | Rohrburg, Pa..... | Sept. 16, 1857. |
| 18176 | Rice, hulling, machines for | Wilson Ager..... | Rohrburg, Pa..... | Sept. 16, 1857. |
| 18099 | Sack-fastener | William P. and J. E. B. Maxson..... | Albion, Wis..... | Sept. 1, 1857. |
| 18419 | Sacks, &c., string-fastening for | James A. Watrous..... | Green Spring, Ohio..... | Oct. 13, 1857. |
| 17336 | Shafting, coupling for..... | William and Coleman Sellers..... | Philadelphia, Pa..... | May 5, 1857. |
| 17716 | Shafting, &c., strap pillow-block for..... | George H. Reynolds, assignor to himself and D. B. Hinchley..... | Medford, Mass..... | June 30, 1857. |
| 17596 | Smut-machine | James Tompkins | Liberty, Pa..... | June 16, 1857. |
| 16897 | Smut-machines..... | William Zimmerman..... | Quincy, Ill..... | Mar. 24, 1857. |
| 16980 | Smut-machines..... | Israel Kepler..... | Milton, Pa..... | April 7, 1857. |
| 17869 | Smut-machines..... | Everard M. Clark..... | Lancaster, Pa..... | July 28, 1857. |
| 18484 | Smut-machines..... | John A. Woodward | Burlington, Iowa..... | Oct. 20, 1857. |
| 18727 | Speed-indicator..... | James M. Benckert | Philadelphia, Pa..... | Dec. 1, 1857. |

CLASS XIV.—LUMBER, including machines and tools for preparing and manufacturing, such as sawing, planing, mortising, shingle and stove, carpenters' and coopers' implements.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-----------------------|-----------------|
| 18003 | Auger-bit, expanding | Asa Weeks, assignor to himself and Orin W. Fiske. | South Boston, Mass | Aug. 11, 1857. |
| 17868 | Auger-handle, fastening | William N. Clark | Chester, Conn | July 28, 1857. |
| 18399 | Auger, tubular | J. A. Reynolds | Elmira, N. Y. | Jan. 13 1857. |
| 18549 | Barrels, chamfering and crooving, method of. | James H. Mattison | Scriba, N. Y. | Nov. 3, 1857. |
| 18642 | Bench-clamp, carpenter's | James E. A. Gibbs | Mill Point, Va. | Feb. 17, 1857. |
| 18345 | Bench, joiner's | J. W. Mahan | Lexington, Ill. | Oct. 6, 1857. |
| 17292 | Bench-strip, joiner's | Charles T. Pearson | Chelsea, Mass | May 12, 1857. |
| 17769 | Bit, brace | Henry W. Porter, assignor to Samuel G. Porter. | West Earl, Pa | July 7, 1857. |
| 17891 | Bit, brace, for boring obliquely to the axis of the stock. | Charles C. Plaisted | Chicopee, Mass | July 28, 1857. |
| 17038 | Bit, expansion | Alexander Hall. | New York, N. Y. | April 14, 1857. |
| 17395 | Bit for cutting out cylindrical plugs of wood | C. W. Saladee | Columbus, Ohio | May 26, 1857. |
| 18282 | Bit-holder | Benjamin B. Hill | Chicopee, Mass | Sept. 29, 1857. |
| 17479 | Bit in the brace, holding, devices for | George Benjamin | Avoca, N. Y. | June 9, 1857. |
| 17770 | Bit or drill holder | Amos J. Smith, assignor to himself and George W. Oda. | Lynn, Mass | July 7, 1857. |
| 16938 | Bit-stocks, method of constructing. | Abel W. Streeter | Shelburne Falls, Mass | Mar. 31, 1857. |
| 16931 | Bits in their stocks, mode of securing | A. C. Moore | Wilmington, Vt. | Mar. 31, 1857. |
| 17341 | Blind-slats, compressing the ends of, machine for. | Luther T. Smart. | Manchester, N. H. | May 19, 1857. |
| 16777 | Boards to uniform thickness, machine for reducing and smoothing. | Tristram D. Knight. | Charleston, Tenn | Mar. 3, 1857. |
| 17017 | Boring-machine | Jonas Rosenbury | Cherryville, N. J. | April 14, 1857. |
| 18067 | Boring-machine | Emmett Quinn | Trenton, N. J. | Aug. 26, 1857. |
| 18672 | Boring-machine | Lafayette Stevens, assignor to William L. Gibson. | Elmira, N. Y. | Dec. 16, 1857. |
| 17630 | Boring-machines, device for feeding and limiting the depth of hole in. | Levi B. Lloyd | Warwick Township, Pa. | June 23, 1857. |

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|-------|--|--|---------------------|---|
| 17799 | Boring-machines, mortise, device for feeding the cutter intermittently in. | Hiram E. Payne. | Troy, N. Y. | July 14, 1857. |
| 18370 | Boring-machines, wood. | Lafayette Stevens, assignor to William L. Gilson. | Elmira, N. Y. | Oct. 6, 1857. |
| 17001 | Boring-mills. (See Class II, letter B.) | | | |
| 18387 | Boxes, cylindrical, machine for manufacturing. | Horace S. Smith, Elijah Hanson, and M. S. Richardson. | Rutland, Vt. | April 7, 1857. |
| 16800 | Bungs, machine for cutting. | Josiah Kirby. | Cincinnati, Ohio | Sept. 29, 1857. |
| 18161 | Chair-seats, solid wooden, machine for forming the curved surface of. | E. and A. and C. Kilburn | Burlington, Vt | Mar. 10, 1857. |
| 18338 | Chisel, mortising. | John A. Scroggs. | Burlington, Vt | Sept. 8, 1857. |
| 16637 | Dove-tails, adjustable gauge for | Juan S. L. Babbs and Amos H. Ray. | Boston, Mass. | Dec. 16, 1857. |
| 18977 | Dove-tails and their grooves, machine for cutting. | Elbridge G. Mathews, assignor to Harvey Church. | Clear Water, Minn. | Feb. 10, 1857. |
| 18305 | Drawing-knife | Richard N. Watrous | Troy, N. Y. | Dec. 15, 1857. |
| 16236 | Drilling and milling machine | William D. Sloan | Charlestown, Ohio | Sept. 29, 1857. |
| 17403 | Forms, irregular, lathe for turning automatic. | William D. Sloan | New York, N. Y. | Mar. 31, 1857. |
| 16816 | Gauge, compound | Albert Williams. | New York, N. Y. | May 26, 1857. |
| 17014 | Hoop-pole machines, method of operating the splitting knife in. | Carver Washburn. | Philadelphia, Pa. | Mar. 10, 1857. |
| 17500 | Hoop-poles, splitting, machine for | Joseph and Sylvester Sawyer, assignors to the American Hoop Machine Company. | Bridgewater, Mass | April 7, 1857. |
| 16402 | Hoops, cheese. (See Class XII, letter H.) | Lovitt Exames | Fitchburg, Mass | June 9, 1857. |
| 18612 | Hub-blocks for the lathe, machine for preparing. | John Shaerer | Kalamazoo, Mich | Jan. 13, 1857; add'l Improvement July 13, 1857. |
| 16952 | Hub-borer | | Reading, Pa. | Dec. 8, 1857. |
| 17735 | Hubs, boring, machine for. | Zina Doolittle. | Perry, Ga. | Nov. 10, 1857. |
| 16557 | Hubs for boring, clamp for centering. | John Thrasher | Avon, N. Y. | Mar. 31, 1857. |
| 16493 | Hubs while being bored, centering and holding, method of. | Albert Moore | Honeoye, N. Y. | July 7, 1857. |
| 17735 | Joiners' ploughs, device for securing the stocks to the guide rods of. | Stephen Going | New York, N. Y. | Feb. 3, 1857. |
| 16557 | Joining boxes, &c., method of. | James Stimpson | Baldwinsville, Mass | Jan. 27, 1857. |
| 17782 | Lathe-machine | Joseph B. Okey | Indianapolis, Ind | July 14, 1857. |
| 17866 | Lathe, automatic | Alexander Edmonds | Mount Pulaski, Ill | July 28, 1857. |
| 17866 | Lathe, automatic, for turning irregular forms. | Samuel N. Baker. | New Haven, Conn | |
| | Lathe, watch-maker's, chuck for. (See Class XVIII, letter L.) | | | |

XIV.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees | Residence. | Date of patent. |
|-------|---|---|------------------------|-----------------|
| 17762 | Lathes for beaded work, mode of operating radical cutters in. | George W. Walton and Henry Edgarton. | Wilmington, Del. | July 7, 1857. |
| 18268 | Lathes for manufacture of clothes pins, &c. | John Humphrey, assignor to himself and Amos E. Berry. | Keene, N. H. | Sept. 22, 1857. |
| 18120 | Lathes, sliding-rest for. | Elexor S. Gardner, assignor to Smith, Gould, & Co. | Philadelphia, Pa. | Sept. 1, 1857. |
| 18112 | Lathes, socket, coupling for. | George N. Trowbridge | Lowell, Mass. | Sept. 1, 1857. |
| 17313 | Lumber, pieces of, arrangement of devices for dressing. | Harvey Brown | New York, N. Y. | May 19, 1857. |
| 17494 | Mitre-box | George L. Chapin | Perryburgh, N. Y. | June 9, 1857. |
| 17680 | Mortising and boring machine | J. M. Joy | Canton, Ohio | July 28, 1857. |
| 17285 | Mortising-chisel | George P. Ketcham | Bedford, Ind. | May 12, 1857. |
| 17878 | Mortising-chisel | C. J. Helstand | Rapho, Pa. | July 28, 1857. |
| 16392 | Mortising-machine | Charles Green | Bethel, Ohio | Jan. 6, 1857. |
| 17701 | Mortising-machine | H. B. Smith | Lowell, Mass. | June 30, 1857. |
| 18521 | Mortising-machines, chisel in, device for reversing the. | Caleb B. Rogers | Norwich, Conn. | Oct. 27, 1857. |
| 18535 | Mortising-machines, chisel in, method for reversing the. | D. M. Cummings and P. C. Cambridge, jr. | North Enfield, N. H. | Nov. 3, 1857. |
| 18977 | Mortising-machines, device for throwing into and out of gear the tool of. | Levi Kittinger | East Greenville, Ohio. | Dec. 29, 1857. |
| 17183 | Mortising-machines, method of reversing the chisels of. | Moses Marshall, assignor to Richard Ball and Charles H. Ballard. | Lowell, Mass. | April 28, 1857. |
| 17141 | Mortising the stiles for blind-slats, machine for. | D. T. Drake | Leominster, Mass. | April 28, 1857. |
| 17657 | Plane, bench | Thomas D. Worrall, assignor to himself and Thomas F. Caldicott, assignors to Thomas F. Caldicott. | Lowell, Mass. | June 23, 1857. |
| 17553 | Plane, bench, stock for | Joel Bryant. | Brooklyn, N. Y. | June 16, 1857. |
| 17965 | Plane-bits, machine for whetting. | Jesse M. Gilstrap. | Payetteville, Ark. | Aug. 11, 1857. |
| 16805 | Plane, carpenter's | Oldin Nichols | Lowell, Mass. | Mar. 10, 1857. |
| 16899 | Plane, carpenter's | M. B. Tidey | Ithaca, N. Y. | Mar. 24, 1857. |

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|-------|--|---|---------------------------|-----------------|
| 17641 | Plane, hand, tonguing and grooving..... | Porter A. Gladwin, assignor to himself and Thomas F. Caldicott. | Boston, Mass..... | June 9, 1857. |
| 17618 | Plane-irons in their stocks, method of holding and adjusting. | Willard W. Chipman..... | Lowell, Mass..... | June 23, 1857. |
| 17645 | Plane-irons in their stocks, mode of securing and adjusting. | William Stoddard..... | Lowell, Mass..... | June 23, 1857. |
| 16569 | Plane, joiner's..... | J. F. Palmer, assignor to S. W. Palmer..... | Auburn, N. Y..... | Feb. 3, 1857. |
| 17286 | Plane, joiner's..... | Benjamin J. Lane..... | Newburyport, Mass..... | May 12, 1857. |
| 17332 | Plane, joiner's..... | James Lashbrooks..... | Owensburg, Ky..... | May 19, 1857. |
| 17951 | Plane, joiner's..... | Thomas D. Worrall..... | Lowell, Mass..... | Aug. 4, 1857. |
| 16964 | Plane-stocks, carpenters', machine for cutting the throats of. | Henry S. Dewey, assignor to H. S. Dewey and L. W. Newton. | Bethel, Vt..... | Mar. 31, 1857. |
| 18312 | Planes, joiners', method of attaching adjustable handles to. | Thomas D. Worrall..... | Lowell, Mass..... | Sept. 29, 1857. |
| 16412 | Planes, size of the mouth in, method of adjusting the. | Thomas J. Tolman..... | South Scituate, Mass..... | Jan. 13, 1857. |
| 17921 | Planes, smoothing-stock for..... | John F. W. Erdmann..... | Philadelphia, Pa..... | Aug. 4, 1857. |
| 17300 | Planing chair-seats, machine for..... | Edward Q. Smith..... | Cincinnati, Ohio..... | May 12, 1857. |
| 17343 | Planing-cutters, rotary..... | Henry D. Stover..... | Boston, Mass..... | May 19, 1857. |
| 18007 | Planing-cutters, rotary..... | H. H. Baker..... | New Market, N. J..... | Aug. 18, 1857. |
| 16513 | Planing hoops, machine for..... | Sylvester Sawyer, assignor to American Hoop Machine Company. | Fitchburg, Mass..... | Jan. 27, 1857. |
| 17171 | Planing hoops, machines for..... | Thaddeus S. Scoville..... | Elmira, N. Y..... | April 28, 1857. |
| 18806 | Planing-machine..... | John D. Dale..... | Philadelphia, Pa..... | Dec. 8, 1857. |
| 17963 | Planing-machines, arrangement of feed-rollers for. | Benajah Fitts..... | Worcester, Mass..... | Aug. 11, 1857. |
| 17315 | Planing-machines, dogging lumber in, devices for. | David N. B. Coffin, jr., and Henry D Stover. | Boston, Mass..... | May 19, 1857. |
| 17873 | Planing-machines, shell-roller bed for..... | George Darby and James E. Young..... | Augusta, Me..... | July 28, 1857. |
| 17833 | Planing-machines, &c., feed rollers of..... | Jonathan Hall..... | Worcester, Mass..... | July 21, 1857. |
| 16403 | Planing shingles or tapering pieces, machine for. | Reuben W. Sharp..... | Montgomery, Ala..... | Jan. 13, 1857. |
| 16427 | Sashes, &c., making, method of..... | Daniel Berlew..... | Delaware, Ohio..... | Jan. 13, 1857. |
| 18099 | Saw-clamp..... | Leonard O. Fairbanks..... | Bridgeton, Me..... | Sept. 1, 1857. |
| 18178 | Saw-filer. (See Class II.)..... | A. M. Beardley..... | White Pigeon, Mich..... | Oct. 13, 1857. |
| 18415 | Saw-filer..... | Jonathan Smith..... | Agawam, Mass..... | Oct. 13, 1857. |
| 18324 | Saw-filing machine..... | Jeremiah S. Cole and Harley Stone..... | Blackstone, Mass..... | Oct. 6, 1857. |
| 17153 | Saw-gummer..... | Oliver B. Judd..... | Little Falls, N. Y..... | April 28, 1857. |

XIV.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|-----------------------------|-----------------|
| 18394 | Saw-mill | Wooster A. Flanders..... | Troy, N. Y. | Oct. 13, 1857. |
| 17637 | Saw-mill blocks, automatic..... | James B. Drake, and A. M. Fox..... | Williamsport, Pa. | June 9, 1857. |
| 16795 | Saw-mill clogs, method of operating..... | Hiram Wells..... | Florence, Mass. | Mar. 10, 1857. |
| 16888 | Saw-mill dogs..... | George W. Hearn..... | Princess Ann, Md. | Mar. 24, 1857. |
| 18860 | Saw-mill, portable..... | John A. Taplin..... | Fishkill, N. Y. | Dec. 15, 1857. |
| 18474 | Saw-mill, reciprocating..... | T. T. Prosser..... | Oconomowock, Wis. | Oct. 20, 1857. |
| 17677 | Saw-mills, adjustable fender posts for..... | Samuel Tarver..... | Augusta, Ark. | June 30, 1857. |
| 16876 | Saw-mills, double carriages in, method of operating..... | Henry Harpold..... | Racine, Ohio | Mar. 24, 1857. |
| 17170 | Saw-mills, head-blocks of, method of setting | Franklin B. Kendall..... | Bath, Me. | April 28, 1857. |
| 16697 | Saw-set | Ira Robbins..... | Unityville, Pa. | Feb. 24, 1857. |
| 17099 | Saw-set | Joseph D. Spiller..... | Concord, N. H. | April 21, 1857. |
| 17620 | Saw-set | Oliver B. Judd..... | Little Falls, N. Y. | June 23, 1857. |
| 18921 | Saw-set | Jacob Erdle..... | West Bloomfield, N. Y. | Dec. 22, 1857. |
| 18114 | Saw-teeth, planing-machine for..... | Edward Marshall..... | Brooklyn, N. Y. | Sept. 1, 1857. |
| 18039 | Saw-teeth, setting-swage for | John N. Wilkins..... | Waukegan, Ill. | Aug. 25, 1857. |
| 17719 | Sawing-apparatus, cross-cut | Pearson Crosby..... | Fredonia, N. Y. | June 30, 1857. |
| 18745 | Sawing beaded curves, machine for | H. F. Willson, assignor to himself and Henry B. West..... | Elyria, Ohio..... | Dec. 1, 1857. |
| 18814 | Sawing, circular, machine | John C. Hints..... | Cincinnati, Ohio | Mar. 10, 1857. |
| 18402 | Sawing given curvatures, device for guiding the logs in..... | C. P. S. Wardwell..... | Lake Village, N. H. | Oct. 13, 1857. |
| 18960 | Sawing hand-rails or stair-wreaths, machine for..... | Thomas Miles..... | Greenbush, N. Y. | Dec. 29, 1857. |
| 16407 | Sawing hoops, machine for..... | John Davis..... | Cincinnati, Ohio | Jan. 13, 1857. |
| 16436 | Sawing-machine | Emerson C. Strange..... | Taunton, Mass. | Jan. 20, 1857. |
| 17112 | Sawing-machine | George Gregg..... | Lowe's Mills, Va. | April 21, 1857. |
| 18443 | Sawing-machine | H. F. Furmost..... | Saginaw City, Mich. | Oct. 20, 1857. |
| 18670 | Sawing-machine | J. T. Foster..... | Jersey City, N. J. | Nov. 10, 1857. |
| 16894 | Sawing-machine, circular | Harvey Brown..... | New York, N. Y. | Mar. 24, 1857. |
| | | George F. Woolston..... | Washington, D. C. | |

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|-------|---|---|-------------------------|-----------------|
| 19005 | Sawing-machine, circular..... | E. H. De Witt, assignor to himself and Butler N. Strong..... | Xenia, Ohio..... | Dec. 29, 1857. |
| 16326 | Sawing-machine, cross-cut..... | William Cady..... | Eaton, Ohio..... | Jan. 6, 1857. |
| 18943 | Sawing-machine, cross-cut..... | George R. Moore, assignor to himself and Charles G. Sargent..... | Westford, Mass..... | Dec. 22, 1857. |
| 16883 | Sawing-machine, cross-cut, portable..... | Stephen Sooton..... | Richmond, Ind..... | Mar. 24, 1857. |
| 17686 | Sawing-machine for felling trees..... | Matthew Ludwig..... | Boston, Mass..... | June 30, 1857. |
| 17484 | Sawing-machine, portable cross-cut..... | Stephen Sooton..... | Richmond, Ind..... | June 2, 1857. |
| 17601 | Sawing-machine, portable steam..... | Samuel R. Wilmot and Samuel G. Fairbanks..... | Watertown, Conn..... | June 16, 1857. |
| 17425 | Sawing-machine, scroll..... | R. G. Curtis..... | Brooklyn, N. Y..... | June 2, 1857. |
| 18942 | Sawing-machinery, circular, method of governing the cut of..... | John J. Martin and M. M. Wombough, assignors to A. C. Martin and R. Ashcroft..... | East Boston, Mass..... | Dec. 22, 1857. |
| 16806 | Sawing-machines, arrangement of devices for suspending and adjusting sticks in..... | Ezekiel Page..... | Cincinnati, Ohio..... | Feb. 10, 1857. |
| 18269 | Sawing-machines, circular, method of holding and setting the log in..... | James H. Rechelder..... | Plates, Pa..... | Sept. 29, 1857. |
| 16854 | Sawing-machines, circular, portable reciprocating..... | Osborn E. Stevens..... | Rome, Mich..... | Mar. 17, 1857. |
| 16812 | Sawing-machines, circular, table-gauge for..... | M. B. Tidey..... | McCall's Ferry, Pa..... | Mar. 10, 1857. |
| 18066 | Sawing-machines, cross cut, method of clamping logs in..... | Stephen Woodard..... | Ithaca, N. Y..... | Aug. 25, 1857. |
| 17860 | Sawing-machines, feeding arrangement for..... | Thomas J. Alexander..... | New London, N. H..... | July 28, 1857. |
| 16454 | Sawing-machines, feeding lumber laterally in, method of..... | Samuel R. Smith..... | Florence, Mass..... | Jan. 20, 1857. |
| 18948 | Sawing-machines, gearing for feed-rollers in re- | D. B. Bartholomew..... | Lancaster, Pa..... | Dec. 29, 1857. |
| 17626 | Sawing-machines, picker..... | John Haw..... | Old Church, Va..... | June 23, 1857. |
| 17629 | Sawing-mill..... | James G. Kennedy..... | Cincinnati, Ohio..... | June 23, 1857. |
| 17840 | Sawing-mill..... | Franklin B. Kendall..... | Bath, Me..... | July 21, 1857. |
| 17829 | Sawing-mill..... | William F. Ferry, jr..... | Ferrysburg, Mich..... | July 21, 1857. |
| 16726 | Sawing-mill, circular..... | Phillander Eggleston..... | Mobile, Ala..... | Mar. 3, 1857. |
| 18098 | Sawing-mills, feed and gizzing movement for..... | George D. Lund..... | Yonkers, N. Y..... | Sept. 1, 1857. |
| 17226 | Sawing-mills, self-reversing feed motion for..... | Daniel & Angus A. Methven..... | Wooster, Ohio..... | May 5, 1857. |
| 16624 | Sawing, re-, lumber, machine for..... | Simon P. Winne..... | Albany, N. Y..... | Feb. 10, 1857. |
| 17026 | Sawing shingles, machine for..... | Jonathan Creager..... | Cincinnati, Ohio..... | April 14, 1857. |
| 18364 | Sawing shingles, machine for..... | Jesse Gilman..... | Nashua, N. H..... | Oct. 6, 1857. |
| 18967 | Sawing shingles, machine for..... | George Hall..... | Morgantown, Va..... | Dec. 29, 1857. |
| 17346 | Saws, circular, device for allowing play to the arbors of..... | H. B. Wolfe..... | Louisville, Ky..... | May 19, 1857. |

XIV.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|---------------------------|--|
| 16643 | Saws, circular, device for allowing, to play laterally independent of their shafts. | A. P. Gross..... | St. Louis, Mo..... | Feb. 17, 1857. |
| 16655 | Saws, circular, device to allow, end play independent of the driving-shaft. | William S. Reeder..... | St. Louis, Mo..... | Feb. 17, 1857. |
| 17521 | Saws, circular, method of adjusting, obliquely to their shafts. | G. B. Scriven..... | Philadelphia, Pa..... | June 9, 1857; ante-dated May 18, 1857. |
| 16339 | Saws, circular, method of adjusting to any required dish. | Josiah B. Pomroy..... | Chicago, Ill..... | Jan. 6, 1857. |
| 17861 | Saws, circular, method of driving..... | Thomas J. Alexander..... | Waterville, Ohio..... | July 28, 1857. |
| 16424 | Saws, circular, method of mounting and grinding. | G. F. S. Wright..... | Black Oak, S. C..... | Jan. 13, 1857. |
| 17518 | Saws, circular, shield and guide for..... | George W. Rodeboy..... | Milwaukee, Wis..... | June 9, 1857. |
| 18957 | Saws, clamp for setting..... | Cyrus E. Cook..... | Cambridge, Ohio..... | Dec. 29, 1857. |
| 18017 | Saws, dressing, machine for..... | Philo Maltby..... | Dayton, Ohio..... | Aug. 18, 1857. |
| 18250 | Saws, filing (See Class II.) | A. C. Smith and Joseph K. Creighton..... | East Birmingham, Pa..... | Sept. 22, 1857. |
| 17774 | Saws, gauging and filing, machine for..... | Emanuel Andrews..... | Elmira, N. Y..... | July 14, 1857. |
| 17110 | Saws, grinding..... | Albert S. Nippes..... | Lower Marion, Pa..... | April 21, 1857. |
| 17432 | Saws, hand-gauge, attachment for..... | Michael Kennedy..... | Troy, N. Y..... | June 2, 1857. |
| 18651 | Saws, hand, method of adjusting, to circular stocks. | Jacob Vaughan..... | Exchangeville, Pa..... | Nov. 17, 1857. |
| 16782 | Saws, machine for grinding..... | Emanuel Andrews..... | Elmira, N. Y..... | Mar. 10, 1857. |
| 16421 | Saws, "muley," method of hanging, guiding, and adjusting. | A. Winter..... | Pickens Co. H., S. C..... | Jan. 13, 1857. |
| 16416 | Saws, reciprocating, method of hanging and operating. | Carlyle Whipple..... | Lewiston, Mo..... | Jan. 13, 1857. |
| 18547 | Saws, scroll, method of operating..... | John L. Lawton..... | Baltimore, Md..... | Nov. 3, 1857. |
| 17823 | Saws, two circular, mode of cutting tenons by, oblique to shaft. | William H. Harrison..... | Philadelphia, Pa..... | July 14, 1857. |
| 18828 | Shingle..... | S. R. Tenney and Asa Bennett..... | Hubbardston, Mass..... | Dec. 8, 1857. |
| 17254 | Shingle-cutter, rotary..... | William Bevard..... | St. Louis, Mo..... | May 12, 1857. |
| 16646 | Shingle-machine..... | William Huey..... | Columbia, Pa..... | Feb. 3, 1857. |

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|-------|--|--|--------------------------|-----------------|
| 16563 | Shingle-machine | William A. Whiting | St. Louis, Mo. | Feb. 8, 1867. |
| 16742 | Shingle-machine | H. D. McGeorge | Morgantown, Va. | Mar. 3, 1867. |
| 16864 | Shingle-machine | John L. Brown | Indianapolis, Ind. | April 7, 1867. |
| 17104 | Shingle-machine | G. H. Mallory | New York, N. Y. | April 21, 1867. |
| 17347 | Shingle-machine | C. M. Young | Sinclairville, N. Y. | May 19, 1867. |
| 17378 | Shingle-machine | W. A. Joratt | Peytonsville, Tenn. | May 28, 1867. |
| 17906 | Shingle-machine | Fibridge Webber | Gardiner, Me. | July 28, 1867. |
| 18512 | Shingle-machine | Simoon Marshall | Philadelphia, Pa. | Oct. 27, 1867. |
| 18681 | Shingle-machine | James Urary | Kittanning, Pa. | Nov. 24, 1867. |
| 16911 | Shingle-machine, rotary | Edwin Edwards | Onedia Lake, N. Y. | Mar. 31, 1867. |
| 17907 | Shingle-machines, method of feeding the bolt in. | William Wood | Westport, Conn. | July 28, 1867. |
| 18679 | Shingles from the bolt, machine for cutting | E. K. Collins | Cambridge, Mass. | Nov. 24, 1867. |
| 18222 | Shingles, method of manufacturing | James E. Young | Augusta, Me. | Sept. 16, 1867. |
| 18207 | Spoke-machine | Samuel Lord | Perry, Ga. | Sept. 16, 1867. |
| 18680 | Spoke-machine | George W. Cook | Springfield, N. J. | Nov. 24, 1867. |
| 17111 | Spoke-shaves, knives of, method of adjusting and holding the. | Manley Packard | North Bridgewater, Mass. | April 21, 1867. |
| 16532 | Spokes, tool for tenoning. | John J. Croy | Caledonia, Mo. | Feb. 3, 1867. |
| 17106 | Square, mitre-square, and bevel, combined. | A. McKensie | Boston, Mass. | April 21, 1867. |
| 16857 | Squares, carpenters', machines for graduating. | Heman Whipple | Shaftsbury, Vt. | Mar. 17, 1867. |
| 16817 | Squares, carpenters', machines for stamping figures on. | Heman Whipple | Shaftsbury, Vt. | Mar. 10, 1867. |
| 17139 | Slave-machine | Henry L. McNish, assignor to H. L. McNish and D. C. Butler | Lowell, Mass. | April 21, 1867. |
| 16746 | Staves, bevelling and jointing, machine for. | Erasmus M. Pitman | Warren county, Va. | Mar. 3, 1867. |
| 18123 | Staves, crossing and chamfering, machine for. | H. L. McNish, assignor to himself and David C. Butler | Lowell, Mass. | Sept. 1, 1867. |
| 17871 | Staves, method of sawing, from the bolt and dressing their edges simultaneously. | E. K. Collins | Cambridge, Mass. | July 28, 1867. |
| 18088 | Staves, sawing, machine for. | Peter Deal | Amsterdam, N. Y. | Sept. 1, 1867. |
| 16849 | Staves, tapering, machine for planing. | James Greenman | Northampton, N. Y. | Sept. 1, 1867. |
| 17946 | Staves, &c., machine for bevelling. | Valentine Munch | Carrollton, La. | Mar. 17, 1867. |
| 17816 | Tenon-cutters, round, method of adjusting to certain fixed sizes. | J. Trabin and C. Voebel | New Orleans, La. | Aug. 4, 1867. |
| 17319 | Tenoning, adjustable bed and gauge to regulate. | Melyn Weatherington | Springfield, Ohio. | July 14, 1867. |
| 17175 | Tenoning blind-slots, machine for. | David Hodges | Suffolk, Va. | May 5, 1867. |
| 18212 | Tenoning-machine. | Lafayette Stevens | Elmira, N. Y. | April 28, 1867. |
| | | Perry Putnam and John E. Crane | Lowell, Mass. | Sept. 16, 1867. |

XIV.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|------------------------|-----------------|
| 16594 | Tenons or blind alats, machine for cutting | Seth C. Ellis..... | Albany, N. Y..... | Feb. 3, 1857. |
| 16453 | Timber, bending, machine for | James D. Sarven..... | Columbia, Tenn..... | Jan. 20, 1857. |
| 18974 | Timber, hewing, guide-gauge for | Jacob Hoke..... | Grand Detour, Ill..... | Dec. 29, 1857. |
| 18388 | Turning spiral forms, machine for | John C. Hinks..... | Cincinnati, Ohio..... | Nov. 10, 1857. |
| 18001 | Turning spools, machines for | A. D. Waymoth, assignor to himself and H. W. Page..... | Fitchburg, Mass..... | Aug. 11, 1857. |
| 16705 | Turning tapering sticks, device to operate the mandrel-cutters in. | Peter H. Niles, assignor to himself, N. Hunt, R. C. Webster, and A. Douglas, jr..... | Boston, Mass..... | Feb. 24, 1857. |
| 17958 | Veneer-machine, rotary | Gilbert Bishop..... | New York, N. Y..... | Aug. 11, 1857. |
| 17072 | Veneers, cutting, knife for | Gilbert Bishop..... | New York, N. Y..... | April 21, 1857. |
| 16529 | Veneers, machine for cutting | Peter Cook..... | Tonawanda, N. Y..... | Feb. 3, 1857. |
| 17190 | Veneers, machine for cutting | Gilbert Bishop..... | New York, N. Y..... | May 6, 1857. |
| 17736 | Veneers, machine for straightening | Joseph H. Goodell..... | Bridgeport, Conn..... | July 7, 1857. |
| 17329 | Wash-boards, machine for making | Edward and Britain Holmes..... | Buffalo, N. Y..... | May 19, 1857. |
| 18944 | Wash-boards, stiles of, machine for cutting the zigzag grooves in the. | O. S. Reynolds, assignor to H. F. Snow..... | Dover, N. H..... | Dec. 22, 1857. |
| 18171 | Wash-boards, wooden, method of manufacturing. | L. B. Batcheller, assignor to West, Canfield, & Co..... | Arlington, Vt..... | Sept. 8, 1857. |
| 18379 | Wood, bending, machine for | Charles F. Beverly..... | Lancaster, Ohio..... | Oct. 13, 1857. |
| 18917 | Wood, carving, machine for | Isaac Lindsley..... | Providence, R. I..... | Dec. 22, 1857. |
| 17169 | Wood, splitting, machine for | Waterman L. Ormsby..... | Jersey City, N. J..... | April 28, 1857. |
| 17061 | Wood, splitting, machines for | W. L. Williams..... | New York, N. Y..... | April 14, 1857. |
| 17249 | Wooden boxes, cylindrical, cutters for turning. | Henry Mellish, assignor to..... | Walpole, N. H..... | May 5, 1857. |
| 18046 | Wooden boxes, turning, machine for | Charles Pope..... | Brooklyn, Mass..... | Nov. 17, 1857. |
| 16953 | Wooden alats, &c., form or mould on which, are made into baskets. | Alexander S. Newton..... | Brandon, Vt..... | |
| | | Joel A. H. Ellis, assignor to Joel Woodbury, as trustee. | Springfield, Vt..... | |
| 17992 | Wooden surfaces, planed, machines for smoothing. | Baxter D. Whitney..... | Winchendon, Mass..... | Aug. 11, 1857. |

CLASS XV.—STONE AND CLAY MANUFACTURES, including machines for pottery, glass-making, brick-making, dressing and preparing stone, cements, and other building materials.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|-------------------------------------|--|---------------------------|-----------------|
| 16929 | Brick-machine..... | John B. Collen..... | Philadelphia, Pa..... | Nov. 17, 1857. |
| 16385 | Brick-machines..... | J. Hockman..... | Mexico, Ind..... | Jan. 13, 1857. |
| 16449 | Brick-machines..... | B. F. Nave..... | Roanoke, Ind..... | Jan. 20, 1857. |
| 16561 | Brick-machines..... | William Wood..... | Hartford, Conn..... | Feb. 3, 1857. |
| 16839 | Brick-machines..... | Almon V. Hough and Richard W. Jones..... | Green Castle, Ind..... | Mar. 17, 1857. |
| 16907 | Brick-machines..... | James A. Dorr, Ira Hersey, and Edward G. Oldfield..... | New York, N. Y..... | Mar. 31, 1857. |
| 17131 | Brick-machines..... | G. I. Washburn and E. H. Bellows, assignors to themselves and C. Washburn..... | Worcester, Mass..... | April 21, 1857. |
| 17220 | Brick-machines..... | Joseph W. Jayne..... | Sandusky, Ohio..... | May 5, 1857. |
| 17248 | Brick-machines..... | James Hotchkiss and William H. Schofield, assignors to themselves and William R. King..... | Yellow Springs, Ohio..... | May 5, 1857. |
| 17390 | Brick-machines..... | Stephen Parks..... | San Francisco, Cal..... | May 26, 1857. |
| 17759 | Brick-machines..... | Stephen Ustick..... | Philadelphia, Pa..... | July 7, 1857. |
| 18040 | Brick-machines..... | P. S. Devlan..... | Reading, Pa..... | Aug. 25, 1857. |
| 18166 | Brick-machines..... | Stephen Ustick..... | Philadelphia, Pa..... | Sept. 8, 1857. |
| 18226 | Brick-machines..... | George I. Washburn, assignor to himself and Anson L. Hobart..... | Worcester, Mass..... | Sept. 15, 1857. |
| 16468 | Brick-machines, rotary..... | George Crangle..... | Philadelphia, Pa..... | Jan. 27, 1857. |
| 16649 | Brick-press..... | Samuel Lille, Jr..... | Fort Wayne, Ind..... | Feb. 17, 1857. |
| 18318 | Brick-press..... | E. H. Bellows..... | Worcester, Mass..... | Oct. 6, 1857. |
| 17546 | *Brick-presses..... | R. H. Harbourn..... | Oskaloosa, Iowa..... | June 9, 1857. |
| 17203 | Brick, rotary, machines..... | George Crangle..... | Philadelphia, Pa..... | May 5, 1857. |
| 17999 | Bricks, moulding, machines for..... | I. Z. A. Wagner, assignor to P. H. Watson, assignor to E. S. Newrick..... | Philadelphia, Pa..... | Aug. 11, 1857. |
| 16457 | Cement, roofing..... | R. H. Smith..... | Cincinnati, Ohio..... | Jan. 20, 1857. |
| 17505 | Clay-pulverizers..... | Ira Hersey and James H. Van Riper..... | New York, N. Y..... | June 9, 1857. |
| 18059 | Glass-furnaces..... | Samuel Richards..... | Philadelphia, Pa..... | Aug. 25, 1857. |
| 17960 | Glass-ware holder..... | Hiram Dillaway..... | Sandwich, Mass..... | Aug. 11, 1857. |
| 18392 | Iron, artificial..... | Timothy Deming..... | East Hartford, Conn..... | Oct. 13, 1857. |

XV.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|----------------------------|-----------------|
| 17098 | Kiln, lime..... | Aaron Jeffries..... | Wilkins, Pa..... | April 21, 1857. |
| 17056 | Kilns, lime..... | William Robinson..... | Baltimore, Md..... | April 14, 1857. |
| 17807 | Kilns, lime..... | Leonard Phleger..... | Philadelphia, Pa..... | July 14, 1857. |
| 17885 | Kilns, lime..... | John McGregor..... | Selma, Ala..... | July 28, 1857. |
| 17889 | Kilns, lime..... | C. D. Page..... | Rochester, N. Y..... | July 28, 1857. |
| 17986 | Kilns, lime..... | Daniel Stephens..... | Elmira, N. Y..... | Aug. 11, 1857. |
| 18531 | Kilns, lime..... | A. G. Anderson..... | Quincy, Ill..... | Nov. 3, 1857. |
| 18635 | Kilns, lime..... | Powell Griscom and Charles S. Denn..... | Baltimore, Md..... | Nov. 17, 1857. |
| 18764 | Kilns, lime..... | Jacob Newkirk..... | Factoryville, N. Y..... | Dec. 1, 1857. |
| 17125 | Pipes, &c., clay, machines for forming..... | Charles P. S. Wardwell..... | Lake Village, N. H..... | April 21, 1857. |
| 18298 | Pottery-ware, machines for manufacturing..... | Philip Pointon..... | Baraboo, Wis..... | Sept. 29, 1857. |
| | Rock-cutting and drilling machine. (See Class IX, letter D.) | | | |
| 16637 | Slates, marking..... | John W. Hoard..... | Providence, R. I..... | Feb. 24, 1857. |
| | Slates, school. (See Class XXII.) | | | |
| 17993 | Stone and glass, polishing, machines for..... | George H. Wood..... | Green Bay, Wis..... | Aug. 11, 1857. |
| 16545 | Stone, dressing and polishing, machines for..... | David Hinman..... | Berea, Ohio..... | Feb. 3, 1857. |
| 18799 | Stone, fire-proof..... | Thomas Hodgson..... | Brooklyn, N. Y..... | Mar. 10, 1857. |
| 18460 | Stone-grooving machines..... | George W. Bishop..... | Brooklyn, N. Y..... | Jan. 27, 1857. |
| 16878 | Stone into regular forms, machines for breaking slabs or blocks of. | Ira Merrill..... | Shelburne Falls, Mass..... | Mar. 24, 1857. |
| 16672 | Tile-machine..... | Junius Foster, assignor to J. Herbold, George Kuhn, and Junius Foster. | Brooklyn, N. Y..... | Feb. 17, 1857. |

CLASS XVI.—LEATHER, including tanning and dressing, manufacture of boots, shoes, saddlery, harness, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of Patent. |
|-------|--|---|------------------------------|---|
| 17051 | Boot and shoe heels..... | Stephen Oliver, jr..... | Lynn, Mass..... | April 14, 1857. |
| 18227 | Boot and shoe sole-cutter..... | Parker Wells, assignor to Samuel Mower..... | Middleton, Mass..... | Sept. 16, 1857. |
| 18237 | Boot and shoe soles, edge-planer for trimming..... | Isaac A. Dunham..... | North Bridgewater, Mass..... | Sept. 23, 1857. |
| 17408 | Boot and shoe soles, India rubber, gutta-percha, and other machines for cutting..... | Stephen Thurston, assignor to himself, Marcus L. Ward, and Huntington & Co..... | Newark, N. J..... | May 26, 1857. |
| 17906 | Boot and shoe soles, trimming the edges of, edge-plane for..... | Charles Warren..... | Putnam, Conn..... | July 28, 1857. |
| 17603 | Boot-counters, skiving, machine for..... | William Butterfield and Bradford Steeten, assignors to themselves and E Townsend..... | Boston, Mass..... | June 16, 1857. |
| 16670 | Boot-crimping machines..... | J. G. Baker, jr., assignor to J. G. Baker, jr., and Charles Bradfield..... | Philadelphia, Pa..... | Feb. 17, 1857. |
| 18074 | Boot-crimps..... | William W. Willmott, assignor to himself and Amos H. and Charles H. Bralnard..... | Boston, Mass..... | Aug. 25, 1857. |
| 17067 | Boot-trees..... | William W. Willmott, assignor to himself and Henry F. Gardner..... | Boston, Mass..... | April 14, 1857. |
| 17947 | Boot-trees..... | William Upfield..... | Lancaster, Ohio..... | Aug. 4, 1857. |
| 17455 | Boots and shoes, heels of, heel-cutter for cutting out..... | John Shaw..... | Natick, Mass..... | June 2, 1857. |
| 18152 | Boots and shoes, lasting, machines for..... | John Kimball..... | Boston, Mass..... | Sept. 8, 1857. |
| 17998 | Boots and shoes, machines for pegging..... | Benjamin F. Sturtevant, assignor to himself and Elmer Townsend..... | Boston, Mass..... | Aug. 11, 1857. |
| 18594 | Boots and shoes, patterns for cutting out the uppers of..... | W. W. Merriam..... | Oswego, N. Y..... | Nov. 10, 1857. |
| 17514 | Boots and shoes, pegging, machines for..... | B. F. Sturtevant, assignor to himself and Elmer Townsend..... | Boston, Mass..... | June 9, 1857. |
| 18170 | Boots and shoes, pegging, machines for..... | Seth D. Tripp, assignor to himself and Luther Hill..... | Winchester, Mass..... | Sept. 8, 1857. |
| 18879 | Boots and shoes, pegging, machines for..... | Wm. Wells, assignor to Edgar M. Stevens..... | Boston, Mass..... | Dec. 15, 1857. |
| 18583 | Boots and shoes, water-proof, soles and heels for..... | B. D. Godfrey..... | Milford, Mass..... | Nov. 10, 1857. |
| 18291 | Boots and shoes without seams, manufacture of the "uppers" of..... | Samuel Middleton..... | England..... | Sept. 29, 1857; Eng-land, Nov. 3, 1856. |

XVI.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|-------|---|--|--------------------------|-----------------|
| 17624 | Boots, manufacture of..... | James Scrimgeour..... | Brooklyn, N. Y..... | June 9, 1857. |
| 17668 | Bridle-bits, connecting the cheek-pieces to the mouth-piece by method of..... | Kasson Frazer..... | Syracuse, N. Y..... | May 12, 1857. |
| 16947 | Buckles..... | George P. Woodruff..... | Watertown, Conn..... | Jan. 6, 1857. |
| 17645 | Carpet-bags..... | Joseph Zepfel, assignor to Joseph Zepfel and John B. Radley..... | New York, N. Y..... | June 9, 1857. |
| 16834 | Collars, horse, machines for stuffing..... | Wade H. Haworth..... | Philadelphia, Pa..... | Mar. 17, 1857. |
| 17902 | Collars, horse, machines for stuffing..... | J. C. Tobias..... | Lincoln, Ill..... | July 28, 1857. |
| 18290 | Hame-tug fastening..... | W. J. Lockwood..... | Sturgis, Mich..... | Sept. 29, 1857. |
| 16475 | Hames, fastenings for..... | Henry A. Fowler..... | East Guilford, N. Y..... | Jan. 27, 1857. |
| 18601 | Harness-buckles..... | John Prendergast..... | Boston, Mass..... | Nov. 10, 1857. |
| 16660 | Harness for horses..... | Joseph Smith..... | Delaware, Ohio..... | Feb. 17, 1857. |
| 16530 | Harness-hames, fastenings for..... | Homer Compton..... | Wells' Corner Pa..... | Feb. 3, 1857. |
| 17117 | Harness-saddles..... | Palmer Shaw..... | Syracuse, N. Y..... | April 21, 1857. |
| 18996 | Harness-saddles..... | Richard Swift..... | New Haven, Conn..... | Dec. 29, 1857. |
| 18790 | Harness-traces, device for fastening..... | Joseph W. Briggs, assignor to Ju. son A. Lasell..... | Cleveland, Ohio..... | Dec. 1, 1857. |
| 18300 | Harness, awning frames for horses attachable to..... | N. Pullman..... | New Oregon, Iowa..... | Sept. 29, 1857. |
| 18614 | Leat-holders..... | A. J. Tewksbury..... | Haverhill, Mass..... | Nov. 10, 1857. |
| 17160 | Leat-holders, revolving..... | Benjamin Marshall..... | Philadelphia, Pa..... | April 28, 1857. |
| 18427 | Lasting-pincers..... | B. F. Sturtevant, assignor to Elmer Townsend..... | Skowhegan, Maine..... | Oct. 13, 1857. |
| 18310 | Leats, hollow metallic..... | Sylvanus H. Whorf..... | Malden, Mass..... | Sept. 29, 1857. |
| 17471 | Leather and hides, process of splitting..... | Leaie Lippmann, assignor to M. J. A. Gulet..... | Paris, France..... | June 2, 1857. |
| 17576 | Leather, scouring and setting, machines for..... | Peter E. Hammel..... | Pulaski, N. Y..... | June 16, 1857. |
| 17445 | Leather shoe-binding, manufacturing..... | E. L. Norton..... | Charlestown, Mass..... | June 2, 1857. |
| 16573 | Leather, stuffing..... | Joseph Armstrong..... | Woburn Centre, Mass..... | Feb. 10, 1857. |
| 17654 | Leather, &c., splitting, rigid hoop-knife for..... | D. H. Chamberlain..... | West Roxbury, Mass..... | June 16, 1857. |
| 18441 | Leather, &c., stripping, machine for..... | A. R. E. Falck and Paul Stoerger..... | Newark, N. J..... | Oct. 20, 1857. |
| 16345 | Saddles, riding..... | Seth Ward..... | Princeton, Ind..... | Jan. 6, 1857. |
| 18771 | Saddles, riding..... | Joseph Rudisill..... | Natches, Miss..... | Dec. 1, 1857. |

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|-------|--|--------------------------------------|------------------------------|-----------------|
| 16566 | Saddles, riding, ladles' | Robert Speer | New York, N. Y. | Feb. 3, 1857. |
| 18246 | Saddles, riding, stirrups for | James Neil | Yorkville, N. Y. | Sept. 22, 1857. |
| 16917 | Shoe-lasts, machine for manufacturing | Alanson and William P. Haskell | North Brookfield, Mass. | Mar. 31, 1857. |
| 16569 | Shoe-pegs, splitting, machine for | Nathaniel H. Shaw | Tamworth, N. H. | Feb. 17, 1857. |
| 17399 | Tanning-apparatus | Otis B. Wattles | Waddington, N. Y. | May 26, 1857. |
| | Tanning-composition. (See Class IV, letter C.) | | | |
| 16355 | Tanning hides | E. Daniels | Lafayette, Wis. | Jan. 6, 1857. |
| 17043 | Tanning hides, composition for | David H. Kennedy | New Alexandria, Pa. | April 14, 1857. |
| 18699 | Tanning-liquids. (See Class IV, letter T.) | Kingsley R. Olmstead | Chicago, Ill. | Nov. 10, 1857. |
| 18046 | Tanning-mills, lateral feed-motion for | Charles H. Hinckley | Stonington, Conn. | Aug. 25, 1857. |
| | Trunks, mail-bags, &c., method of rendering the mouths of, water-tight | | | |
| 16336 | Trunks, travelling | Henry Loemenberg | New York, N. Y. | Jan. 6, 1857. |
| 17617 | Whips, raw-hide, machines for polishing | Eugend Blattner | Philadelphia, Pa. | June 23, 1857. |
| 17133 | Whips, raw-hide, method of manufacturing | Charles Beader | Brooklyn, N. Y. | April 28, 1857. |

CLASS XVII.—HOUSEHOLD FURNITURE, machines and implements for domestic purposes, including washing-machines, bread and cracker machines, feather-dressing, &c.

| No. | Inventions or discoveries | Patentees. | Residence. | Date of patent. |
|-------|---|---|--------------------------------|-----------------|
| 18476 | Apple-alicer | Nathaniel Thomas | East Dixfield, Me. | Oct. 20, 1857. |
| 17484 | Apples, paring and quartering, machines for | Charles F. Bosworth | Petersham, Mass. | June 9, 1857. |
| 16417 | Apples, paring and slicing, machines for | D. H. Whittemore | Chicopee, Mass. | Jan. 13, 1857. |
| 16517 | Apples, paring and slicing, machines for | Clarissa A. Hubbard, administratrix of Guy H. Hubbard, deceased. | Shelburne Falls, Mass. | Jan. 27, 1857. |
| 17901 | Apples, paring and alicing, machines for | R. W. Thickins | Brasher Iron Works, N. Y. | July 28, 1857. |
| 18443 | Apples, paring, machines for | J. O. M. Ingersoll | Ithaca, N. Y. | Jan. 20, 1857. |
| 16666 | Apples, paring, machines for | David H. Whittemore | Worcester, Mass. | Feb. 17, 1857. |
| 16843 | Apples, paring, machines for | B. F. Joelyn | Worcester, Mass. | Mar. 17, 1857. |
| 16993 | Apples, paring, machines for | J. J. Parker | Marietta, Ohio | April 7, 1857. |
| | Bath, shower, apparatus. (See Class XX.) | | | |
| | Bathing apparatus. (See Class XX.) | | | |
| 17282 | Bed-bottoms | J. F. Keeler | Cleveland, Ohio. | May 12, 1857. |

XVII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|---|-----------------------------|-----------------|
| 17605 | Bed-bottoms, spring..... | George W. Dow, assignor to himself and Walter F. French. | Lynn, Mass..... | June 10, 1857. |
| 18357 | Bed-bottoms, spring..... | Henry T. Smith..... | Washington, D. C..... | Oct. 6, 1857. |
| 17658 | Bed, invalid, elevators..... | D. S. Dunning..... | New York, N. Y..... | June 16, 1857. |
| 18189 | Beds, invalid..... | George H. Clark..... | Pontiac, Mich..... | Sept. 15, 1857. |
| 18902 | Bedstead-alata..... | Samuel Hickok..... | Buffalo, N. Y..... | Dec. 22, 1857. |
| 17695 | Bedstead-alata, suspending elastic loop for..... | Charles Robinson..... | Cambridgeport, Mass..... | June 30, 1857. |
| 19008 | Bedstead, steam-spring..... | Charles T. Young, assignor to himself and Henry Crowther. | North Chelmsford, Mass..... | Dec. 23, 1857. |
| 17569 | Bedsteads..... | Peter Hinds..... | Kendall Mills, Me..... | June 16, 1857. |
| 18946 | Bedsteads and sofas, life-preserving..... | John T. Garlick..... | New York, N. Y..... | Mar. 31, 1857. |
| 17818 | Bedsteads, bureau..... | Ethan Whitney..... | Boston, Mass..... | July 14, 1857. |
| 18647 | Bedsteads, folding..... | Benjamin Hinkley..... | Troy, N. Y..... | Feb. 17, 1857. |
| 17281 | Bedsteads, folding..... | James A. Johnston..... | Antrim, Ohio..... | May 12, 1857. |
| 17460 | Bedsteads, folding..... | John B. Wickersham..... | New York, N. Y..... | June 2, 1857. |
| 18565 | Bedsteads, folding, iron..... | Henry F. Vanderhove..... | New York, N. Y..... | Nov. 3, 1857. |
| 18968 | Bedsteads, spring-bottoms for..... | Royal Hatch..... | Strafford, Vt..... | Dec. 29, 1857. |
| 17047 | Bedsteads, wardrobe or bureau..... | James S. McCurdy..... | New York, N. Y..... | April 14, 1857. |
| | Bell-telegraphs, attaching wires to. (See Class VIII, letter T.) | | | |
| 18597 | Bread, machine for cutting..... | James Naughten..... | Cincinnati, Ohio..... | Nov. 10, 1857. |
| 18877 | Brooms, clamps for..... | Samuel Mason..... | Indian Springs, Md..... | Mar. 24, 1857. |
| 18770 | Brooms, machines for making..... | Spencer Rome..... | Baltimore, Md..... | Dec. 1, 1857. |
| 17631 | Brush-handles, machine for finishing..... | Thomas Mitchell..... | Leansburg, N. Y..... | June 23, 1857. |
| 18528 | Brushes, machine for making..... | Leemon A. Tripp, assignor to Lewis C. Platt. | New York, N. Y..... | Oct. 27, 1857. |
| 18950 | Brushes, paint, manufacture of..... | James T. Steer..... | New York, N. Y..... | Mar. 31, 1857. |
| 18647 | Cake-cutter..... | George R. Peckham..... | Worcester, Mass..... | Nov. 17, 1857. |
| 18684 | Cans and bottles, sealing, elastic cap for..... | Rhoda Davis..... | Brookhaven, N. Y..... | Feb. 24, 1857. |
| 18035 | Cans, method of hermetically sealing..... | William Bornmann..... | Cincinnati, Ohio..... | Aug. 25, 1857. |
| 18078 | Cans, sealing..... | William Peanett..... | Baltimore, Md..... | Sept. 1, 1857. |
| 17783 | Cans, &c., bottles, devices for sealing..... | Mills B. Epy..... | Philadelphia, Penn..... | July 14, 1857. |

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| 18931. | Carpet-fastener | Stephen Culver | Newark, N. J | Nov. 17, 1887. |
| 17488 | Carpet-fastenings | David N. B. Coffin, Jr. | Newton, Mass | June 9, 1887. |
| 17890 | Carpeta, fastenings for | Washington H. Penrose | Philadelphia, Penn | July 28, 1887. |
| 17897 | Carpeta, fastenings for | R. E. Schroeder | Rochester, N. Y | July 28, 1887. |
| 18466 | Caster and fan, automatic | E. & A. H. Nortyke | Richmond, Ind | Oct. 20, 1887. |
| 18740 | Casters, bottle, revolving | Edward Gleason | Dorchester, Mass | Dec. 1, 1887. |
| 18839 | Casters for furniture | Timothy P. Burger | Oyster Bay, N. Y | Dec. 15, 1887. |
| 18377 | Chair for pews, folding | M. S. Beech | Brooklyn, N. Y | Oct. 13, 1887. |
| 18873 | Chair, infantine exercising | John Sawlin, D. J. Goodspeed, and John H. Minotti | Gardner, Mass | Dec. 15, 1887. |
| 17008 | Chair, invalid | Ransom Witherell | Huntington, Mass | April 7, 1887. |
| 18696 | Chair, rocking, ventilating | David Kahnweiler | Wilmington, N. C | Nov. 24, 1887. |
| 16835 | Chairs, extension | S. J. Anderson and N. Richardson | Exterville, N. Y | Feb. 17, 1887. |
| 17667 | Chairs for invalids | James G. Holmes | Charleston, S. C | June 16, 1887. |
| 18722 | Chairs, rotary | Jordan L. Mott and William Tabele | Mott Haven, N. Y | Nov. 24, 1887. |
| 16973 | Chairs, sofas, and other articles, forming spiral springs for | Assignors to "The J. L. Mott Iron Works," J. T. Foster, J. J. Banta, and J. H. Banta | New York, N. Y | Nov. 24, 1887. |
| 18632 | Clothes-clamp | Lewis H. Cushman | Jersey City, N. J | April 7, 1887. |
| 16923 | Clothes-plins, slots in, machine for cutting | John Humphrey | Monmouth, Me | Nov. 17, 1887. |
| 17240 | Clothes-pounder | Sardis Thompson | Keene, N. H. | Mar. 31, 1887. |
| 18930 | Clothes-racks | S. I. Russell | West Otis, Mass | May 5, 1887. |
| 18777 | Clothes-wringer | Elley Smith | Chicago, Ill | Dec. 22, 1887. |
| 18710 | Coffee-roasters | Elies Schneider and A. Kolman | Towanda, Penn | Dec. 1, 1887. |
| 18263 | Cooler | W. F. Messenger and Henry Behahn | New Tripoli, Penn | Nov. 24, 1887. |
| 17897 | Corn, green, modes of preserving | David Rome | New York, N. Y | Sept. 22, 1887. |
| 17048 | Cups, molasses | Daniel W. Messer | Baltimore County, Md | June 30, 1887. |
| 16673 | Curtain fixtures | Lewis B. Guzman, assignor to L. B. Guzman, and H. W. and H. Safford | Boston, Mass | April 14, 1887. |
| 17069 | Curtain-fixtures | C. H. Wheeler | Philadelphia, Pa | Feb. 17, 1887. |
| 17967 | Curtain-fixtures | Nathaniel S. Graves | Boston, Mass | April 14, 1887. |
| 18386 | Curtain-fixtures | John W. Currier and James M. Thompson | Boston, Mass | Aug. 11, 1887. |
| 18678 | Curtain-fixtures | Lewis Whitehead | Holyoke, Mass | Nov. 3, 1887. |
| 16960 | Curtain-fixtures, window | Ransom Ballou, jr., and B. F. Hooper | Buffalo, N. Y | Dec. 15, 1887. |
| 16989 | Curtain-fixtures, window | Purchases Miles | Albany, N. Y | April 7, 1887. |
| 16741 | Curtain-rollers | Purchases Miles | Hartford, Conn | April 7, 1887. |
| 17368 | Curtain-rollers | Chandler Fisher | Hartford, Conn | Mar. 3, 1887. |
| 18323 | Curtain-rollers | David N. B. Coffin, Jr. | Milton, Mass | May 26, 1887. |
| | | | Newton Centre, Mass | Oct. 6, 1887. |

XVII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|--------------------------|-----------------|
| 17006 | Curtain-rollers, fixtures for..... | C. H. Wheeler..... | Boston, Mass..... | April 7, 1857. |
| 17911 | Curtain-rollers, fixtures for..... | Lewis White, assignor to himself and Elihu P. White..... | Hartford, Conn..... | July 28, 1857. |
| 18180 | Dough, kneading..... | Hiram Berdan..... | New York, N. Y..... | Sept. 16, 1857. |
| 18723 | Dough, kneading, machine for feeding the flour, mixing the materials, and..... | John Hecker and William Hotine, assignors to John Hecker..... | New York, N. Y..... | Nov. 24, 1857. |
| 18758 | Dough, machines for rolling..... | John McCollom..... | New York, N. Y..... | Dec. 1, 1857. |
| 18759 | Egg-beaters..... | Harvey Miller..... | Cincinnati, Ohio..... | Dec. 1, 1857. |
| 18849 | Egg-beaters..... | John B. Heich..... | Cincinnati, Ohio..... | Dec. 16, 1857. |
| 17517 | Fans, automatic..... | L. Rebstock and N. Heilmel..... | Philadelphia, Pa..... | June 9, 1857. |
| 18493 | Feather-dressing machine..... | Amos Bailey..... | East Poultney, Vt..... | Oct. 27, 1857. |
| 18422 | Graters..... | Nathan Ames, assignor to himself and Edmund Brown..... | Saugus, Mass..... | Oct. 13, 1857. |
| 17361 | Griddles..... | William Bennett..... | New York, N. Y..... | May 26, 1857. |
| 17461 | Hat-stands..... | John B. Wickerham..... | New York, N. Y..... | June 2, 1857. |
| 18543 | Iron, smoothing..... | James Goodin, Jr..... | Cincinnati, Ohio..... | Nov. 3, 1857. |
| 17470 | Iron, sad, holders for..... | Leon Londinsky, assignor to L. Londinsky and A. E. Becker..... | New York, N. Y..... | June 2, 1857. |
| 17105 | Irons, smoothing..... | Galen B. McClain..... | Bath, Me..... | April 21, 1857. |
| 18108 | Irons, smoothing..... | William F. Shaw..... | Boston, Mass..... | Sept. 1, 1857. |
| 18498 | Jars, &c, metallic screw-cap for..... | John K. Chase..... | New York, N. Y..... | Oct. 27, 1857. |
| 16987 | Kettle, tea. (See Class V.)..... | Richard A. Stratton..... | Philadelphia, Pa..... | Mar. 24, 1857. |
| 17867 | Mangles..... | William P. Ford..... | Cheneyville, La..... | July 14, 1857. |
| 17785 | Mattresses..... | William Hersee..... | Buffalo, N. Y..... | Nov. 10, 1857. |
| 18385 | Mattresses, chairs, &c, springs for..... | Thomas Tolman, assignor to John P. Saben..... | West Townsend, Mass..... | Dec. 16, 1857. |
| 18986 | Mattresses, ventilating..... | Edward P. Thompson..... | Worcester, Mass..... | June 9, 1857. |
| 17327 | Mop-head..... | James S. Harris..... | Poultney, Vt..... | July 28, 1857. |
| 17877 | Mop heads..... | Edward Mingay..... | Boston, Mass..... | Nov. 17, 1857. |
| 18645 | Pitchers for molasses, &c..... | Alonso Hebbard..... | New York, N. Y..... | Nov. 3, 1857. |
| 18226 | Pitchers, water-cooling..... | | | |
| | Portfolio or music stands. (See Class XVIII, letter P.)..... | | | |

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|-------|---|--|-----------------------|-----------------|
| 18621 | Quilling-frames | H. N. Dewey, assignor to B. S. Hill & Co. | Berlin Heights, Ohio | Nov. 10, 1857. |
| 17688 | Refrigerators | John C. Schooley | Cincinnati, Ohio | June 16, 1857. |
| 17980 | Sausage-cutters | Jacob Peters | Hummelstown, Pa | Aug. 11, 1857. |
| 18778 | Sausage-machines | W Sniff | Fultonham, Ohio | Dec. 1, 1857. |
| 18748 | Seats, standard for | John Irwin | Philadelphia, Pa. | Dec. 1, 1857. |
| 18713 | Snuffers, candle | O. M. Stow and Augustus Barnes | Southampton, Conn | Nov. 24, 1857. |
| 18513 | Spoons, iron, making | G. J. Mix | Wallingford, Conn | Oct. 27, 1857. |
| 18517 | Spoons, iron, making | Russell B. Perkins | Meriden, Conn. | Oct. 27, 1857. |
| 16350 | Tables, extension | Benjamin Clark, assignor to E. L. Ferguson and C. B. Clark. | Oriskany Falls, N. Y. | Jan. 6, 1857. |
| 18636 | Tables, extension | Henry Gross | Tiffin, Ohio | Nov. 17, 1857. |
| 18733 | Tables, extension | Charles B. Clark | Mount Pleasant, Iowa | Dec. 1, 1857. |
| 18391 | Tables, extension | Edwin A. Curley | Westport, Conn. | Dec. 22, 1857. |
| 18042 | Tables, self-waiting | William B. Farrar and Jonathan H. Farrar | Evans' Mills, N. C. | Aug. 25, 1857. |
| 17087 | Tea-kettles, &c. | James Greenhaigh, sen. | Watford, Mass | April 21, 1857. |
| 16752 | Tin pens, manufacture of | E. F. Parker and J. Smead | Proctorsville, Vt. | Mar. 3, 1857. |
| 18653 | Tooth-brushes | H. N. Wadsworth | Washington, D. C. | Nov. 17, 1857. |
| 18630 | Upholstery purposes, India-rubber springs for | Francis Colton | New York, N. Y. | Nov. 17, 1857. |
| 18929 | Vegetable-cutter | William Robinson | Highgate, Vt. | Dec. 22, 1857. |
| 16667 | Vegetables, cutting, machine for | H. A. Willard | Westminster, Vt. | Feb. 17, 1857. |
| 18465 | Wash-board | W. M. Galusha and B. W. Safford | Arlington, Vt | Dec. 29, 1857. |
| 18483 | Washing-machine | Joel Wianer | Aurora, N. Y. | Oct. 20, 1857. |
| 18489 | Washing-machine | Smith Skinner, assignor to William H. Skinner and Jacob Nichola, jr. | Lowell, Mass | Oct. 20, 1857. |
| 18618 | Washing-machine | Thomas J. Price | Industry, Ill | Oct. 27, 1857. |
| 18642 | Washing-machine | Abraham Huffer | Hagerstown, Md | Nov. 17, 1857. |
| 18693 | Washing-machine | Alexander Dickson | Hillsboro', N. H. | Nov. 17, 1857. |
| 18695 | Washing-machine | John D. Jenkins | Jacksonville, Ill | Nov. 24, 1857. |
| 18720 | Washing-machine | Thomas A. Dugdale, assignor to himself and George Taylor. | Richmond, Ind | Nov. 24, 1857. |
| 18721 | Washing-machine | David Elliot, assignor to himself and Isaac White. | Pembroke, N. H. | Nov. 24, 1857. |
| 18989 | Washing-machine | H. S. Bridwell | New Albany, Ind | Dec. 22, 1857. |
| 18998 | Washing-machine | George Hall and John Fordyce | Morgantown, Va. | Dec. 22, 1857. |
| 18956 | Washing-machine | Thomas C. Churchman | Sacramento, Cal | Dec. 22, 1857. |
| 16567 | Washing-machines | Amos Jacobs, deceased, Lydia Jacobs, administratrix of. | Ithaca, N. Y. | Feb. 3, 1857. |
| 16716 | Washing-machines | Richard Collins | Chilcopee, Mass | Mar. 3, 1857. |
| 16751 | Washing-machines | Louis C. Rodier | Detroit, Mich | Mar. 3, 1857. |

XVII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|--|------------------------|-----------------|
| 17030 | Washing-machines | Thomas A. Drigdale | Richmond, Ind | April 14, 1857. |
| 17113 | Washing-machines | Joseph F. Pond and Charles L. Pond | Cleveland, Ohio | April 21, 1857. |
| 17166 | Washing-machines | Josiah Mayes | Rufalo, N. Y. | April 28, 1857. |
| 17180 | Washing-machines | H. D. Young | Junius, N. Y. | April 28, 1857. |
| 17377 | Washing-machines | Abraham Huffer | Hagerstown, Md. | May 26, 1857. |
| 17764 | Washing-machines | Adam Fisher | Leavenworth city, Kan. | July 14, 1857. |
| 18041 | Washing-machines | Hiram F. Everitt | Benton, Pa. | Aug. 25, 1857. |
| 18045 | Washing-machines | William M. Hammond | Jonesville, Mich. | Aug. 25, 1857. |
| 18050 | Washing-machines | Justin Loomis | De Ruyter, N. Y. | Aug. 25, 1857. |
| 18082 | Washing-machines | Isaac A. Sergeant | Springfield, Ohio | Aug. 25, 1857. |
| 18067 | Washing-machines | Abram Wood | Camden, N. Y. | Aug. 25, 1857. |
| 18163 | Washing-machines | Philip N. Wollaston | Springfield, Ohio | Sept. 8, 1857. |
| 18407 | Washing-machines | Benjamin H. Pearson and Daniel B. Neal | Mount Giliesd, Ohio | Oct. 13, 1857. |
| 18773 | Water-closets. (See Class IX.) Work-boxes | Charles C. Schmitt | New York, N. Y. | Dec. 1, 1857. |

CLASS XVIII.—ARTS POLITE, FINE, AND ORNAMENTAL, including music, painting, sculpture, engraving, books, paper, printing, binding, jewelry, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|---------------------|-----------------|
| 17473 | Bank notes, &c., to prevent counterfeiting of | Christopher D. Seropyan, assignor to Wm. Coulson and J. D. Bald. | New York, N. Y. | June 2, 1857. |
| 16829 | Bill-holder | E. F. French | Franklin, Vt. | Mar. 17, 1857. |
| 17477 | Blotter | R. G. Allerton | New York, N. Y. | June 9, 1857. |
| 17299 | Books, binding | A. H. Rowland | Allegheny city, Pa. | May 12, 1857. |
| 17149 | Books, blank, machine for cutting indexes to | Geo. Hodgkinson and T. F. Baudolph | Cincinnati, Ohio | April 28, 1857. |

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|-------|--|--|--------------------|-----------------------|
| 18935 | Books, machine for turning the leaves of. | Frederick Suter | Brooklyn, N. Y. | Dec. 22, 1857. |
| 17480 | Books, rounding and backing, machine for. | Theodore Bergner | Philadelphia, Pa. | June 9, 1857. |
| 18245 | Brocicola, &c., safety-clip for. | Isaac Hermann | New York, N. Y. | Sept. 23, 1857. |
| 16808 | Breast-plate, guard for. | James M. Ross | Springfield, Mass. | Mar. 10, 1857. |
| 17881 | Breast-plate, mode of fastening | Charles F. Kolb. | Philadelphia, Pa. | July 28, 1857. |
| 17800 | Breast-plate, spiral catch for. | John F. Mascher | Philadelphia, Pa. | July 14, 1857. |
| 17647 | Caligraphs. | Charles Thurber | Worcester, Mass. | June 23, 1857. |
| 16700 | Camera, solar. | David A. Woodward. | Baltimore, Md. | Feb. 24, 1857. |
| 16600 | Daguerreotype cases, &c., process for ornamenting | John F. Mascher | Philadelphia, Pa. | Feb. 10, 1857. |
| 18288 | Diamonds, &c., setting. | Isaac Lindsley | Providence, R. I. | Sept. 29, 1857. |
| 18198 | Easels, painters | George Gillett | Little York, N. Y. | Sept. 16, 1857. |
| 17741 | Electrotype plates, method of backing | Albert H. Jocelyn. | New York, N. Y. | July 7, 1857. |
| 17290 | Engraving cylinders, machines for. | Robert Muckelt and William Elgy | Salford, England. | May 12, 1857. |
| 17146 | Engraving designs on watch and locket cases, &c., machine for. | Charles H. Field | Providence, R. I. | April 28, 1857. |
| 16576 | Envelopes, making, machine for. | Theodore Bergner | Philadelphia, Pa. | Feb. 10, 1857. |
| 18567 | Flexomanus | Horace A. Nathans | Philadelphia, Pa. | Dec. 15, 1857. |
| 17084 | Flutes | John Pfaff. | Philadelphia, Pa. | April 14, 1857. |
| 16489 | Harp, keyed | Anthony Kuhn. | Baltimore, Md. | Jan. 27, 1857. |
| 18060 | Inkstand | Thomas Robjohn | New York, N. Y. | Aug. 26, 1857. |
| 17147 | Inkstands | Kingston Goddard | Philadelphia, Pa. | April 28, 1857; add'l |
| 17373 | Inkstands | Bennett Johns Heywood. | London, England. | Imp't Nov. 8, 1857. |
| 18277 | Jewelry, fastenings for. | John T. Folwell. | Philadelphia, Pa. | May 26, 1857; Eng- |
| 17167 | Letters for signs, &c., mode of constructing | Thomas Moxley. | Brooklyn, N. Y. | land, Jan. 16, 1856. |
| 17137 | Lockets, &c., mode of constructing | Charles G. Bloomer. | Wickford, R. I. | Sept. 29, 1857. |
| 17755 | Melodeon-attachment. | D. L. Sprague and Riley Burditt. | Townshend, Vt. | April 28, 1857. |
| 16574 | Melodeons. | J. C. Briggs | Brattleboro', Vt. | July 7, 1857. |
| 16760 | Melodeons. | Thomas F. Thorakon. | Woodbury, Conn. | Feb. 10, 1857. |
| 16786 | Melodeons. | Riley Burditt and Hated P. Green. | Buffalo, N. Y. | Mar. 3, 1857. |
| 17501 | Melodeons. | William Evans. | Brattleboro', Vt. | Mar. 10, 1857. |
| 18399 | Melodeons. | Stanley A. Jewett. | Lockport, Ill. | June 9, 1857. |
| 18676 | Melodeons, &c., couplings for. | E. B. Carpenter and E. N. Merriam. | Cleveland, Ohio. | Oct. 13, 1857. |
| 18751 | Melodeons, &c., pedal base for | George W. Lane and William N. Manning. | Brattleboro', Vt. | Nov. 24, 1857. |
| 17196 | Melodeons, &c., swells for | Jeremiah Carhart. | East Poutney, Vt. | Dec. 1, 1857. |
| | | | New York, N. Y. | May 5, 1857. |

XVIII.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|--|------------------------------|-----------------|
| 18581 | Music, &c., apparatus for holding..... | A. A. Gaget..... | Paris, France..... | Nov. 10, 1857. |
| 18284 | Musical instruments, reed, stops for..... | Amos P. Hughes..... | Philadelphia, Pa..... | Sept 29, 1857. |
| 16995 | Musical instruments, strings for..... | William Randle..... | Florida, N. Y..... | April 7, 1857. |
| 18699 | Painters' striping instrument..... | J. J. McCormick and George Crossingham..... | New York, N. Y..... | Nov. 24, 1857. |
| 17184 | Paper bags, &c., machines for making..... | Benjamin F. Rice, assignor to B. R. Smith and C. H. Morgan..... | Croton Falls, N. Y..... | April 28, 1857. |
| 17826 | Paper-file..... | D. A. Silles..... | West Meriden, Conn..... | June 9, 1857. |
| 18076 | Paper, folding, machine for..... | C. Pyle Wiggins, A. H. Nurdyke, and B. Strawbridge..... | Richmond, Ind..... | Aug. 26, 1857. |
| 17635 | Paper, folding, machines for..... | James F. Weeks..... | Columbus, Ohio..... | June 9, 1857. |
| 18533 | Paper, folding, machines for..... | Cyrus Chambers, Jr..... | Philadelphia, Pa..... | Nov. 3, 1857. |
| 17776 | Pen and pencil case..... | Edward Baptis..... | Hudson, N. J..... | July 14, 1857. |
| 16711 | Pen and pencil holder..... | George Hunt Byron..... | Governor's Island, N. Y..... | Mar. 3, 1857. |
| 18365 | Pen, fountain..... | A. F. Warren..... | Brooklyn, N. Y..... | Oct. 6, 1857. |
| 16496 | Pen, writing..... | John F. Reeve..... | Richmond, Va..... | Jan. 27, 1857. |
| 18265 | Pencil-sharpener..... | William Strange and Samuel Darling..... | Bangor, Me..... | Sept. 22, 1857. |
| 16514 | Pens, fountain..... | Joseph C. Silvy, assignor to T. J. Dobyne..... | Parish of Orleans, La..... | Jan. 27, 1857. |
| 17298 | Pens, fountain..... | Charles Adolphus Rosefeld..... | Columbus, Ga..... | May 12, 1857. |
| 17761 | Pens, metallic..... | F. A. Wait..... | Philadelphia, Pa..... | July 7, 1857. |
| 17162 | Photographic baths and pens, mode of constructing..... | George Mathiot..... | Washington, D. C..... | April 21, 1857. |
| 16637 | Photographic camera-box..... | L. M. Bolles and W. G. Smith..... | Cooperstown, N. Y..... | Feb. 17, 1857. |
| 18218 | Photographic cameras, diaphragms for..... | J. Robert Werner..... | New York, N. Y..... | Sept. 16, 1857. |
| 16689 | Photographic glass-holder..... | Joseph Longking..... | Newburg, N. Y..... | Feb. 24, 1857. |
| 17231 | Photographic grounds for wood engravers, varnish to prepare..... | Robert Price..... | Worcester, Mass..... | May 5, 1857. |
| 17152 | Photographic pictures, engravings, &c., preparation of..... | S. Dwight Humphrey..... | New York, N. Y..... | April 28, 1857. |
| 16438 | Photographic pictures, treating..... | John B. Hall..... | New York, N. Y..... | July 20, 1857. |

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| 17738 | Photographic plate-holder | William and William H. Lewis | New York, N. Y. | Mar. 8, 1857. |
| 18780 | Photographic plate-holder | John Stook | New York, N. Y. | Dec. 1, 1857. |
| 18841 | Photographic plate-vice | J. W. Jarboe | New York, N. Y. | Mar. 17, 1857. |
| 17066 | Photographic purposes, baths for | John H. Morrow, assignor to himself and Edwin Bennett. | Baltimore, Md. | April 14, 1857. |
| 16979 | Photographic trays | Daniel J. Kellogg | Rochester, N. Y. | April 7, 1857. |
| 18901 | Photographs and other pictures, mode of treating. | Ezekiel C. Hawkins | Cincinnati, Ohio | Dec. 22, 1857. |
| 17330 | Photographs from glass to paper, process for removing. | Edward Howell | Ashtabula, Ohio. | May 19, 1857; reissued Sept. 22, 1857. |
| 17651 | Photographs on glass, back ground for | J. W. Wytes | Wheeling, Va. | June 23, 1857. |
| 17868 | Photography | Henry A. Marchant, assignor to Edward D. Marchant. | Philadelphia, Pa. | July 21, 1857. |
| 16832 | Piano-forte action | James A. Gray | Albany, N. Y. | Mar. 17, 1857. |
| 17238 | Piano-forte action | Henry Steinway, jr. | New York, N. Y. | May 6, 1857. |
| 18453 | Piano-forte action | George Howe | Roxbury, Mass. | Oct. 20, 1857. |
| 17320 | Piano forte actions | Spencer B. Driggs | New York, N. Y. | May 19, 1857. |
| 17296 | Piano-forte bridge | Thomas E. Power | Columbia, Mo. | May 12, 1857. |
| 17789 | Piano-fortes | G. Henry Hulskamp | Troy, N. Y. | July 14, 1857. |
| 18673 | Piano-fortes | S. P. Brooks | Boston, Mass. | Nov. 24, 1857. |
| 18810 | Piano-fortes | H. Goldsmith | Philadelphia, Pa. | Dec. 8, 1857. |
| 17338 | Piano-fortes, metallic bridge for | G. Henry Hulskamp | Troy, N. Y. | July 21, 1857. |
| 16990 | Piano-fortes, sound-boards of | Joseph Newman | Baltimore, Md. | April 7, 1857. |
| 17148 | Pianos, grand, action for | Daniel F. Haasz | Philadelphia, Pa. | April 28, 1857. |
| 17812 | Pianos, wrest-pins for | Gustav Schilling | Hoboken, N. J. | July 14, 1857. |
| 18239 | Portfolio or music stands | Augustus Elhers | Boston, Mass. | Sept. 22, 1857. |
| 17311 | Portfolios | Robert Arthur | Philadelphia, Pa. | May 19, 1857. |
| 18994 | Portfolios | Henry T. Sison | Providence R. I. | Dec. 29, 1857. |
| 17057 | Portmonnaies, lock and clasp for | Daniel C. Smith | Tecumseh, Mich. | April 14, 1857. |
| 17753 | Press, embossing and printing | Samuel J. Smith and Charles Lockie | New York, N. Y. | July 7, 1857. |
| 16718 | Press, hand printing | Nathaniel L. Chamberlin | West Roxbury, Mass. | Mar. 3, 1857. |
| 17307 | Presses, copying | William M. Smith, assignor to himself and Peter Hauny. | Washington, D. C. | May 12, 1857. |
| 16500 | Printers, composing-stick for | William T. Tillinghast | Dayton, Ohio | Jan. 27, 1857. |
| 17007 | Printers' composing-sticks | Daniel Winder | Cincinnati, Ohio | April 7, 1857. |
| 17457 | Printers' composing-sticks | James and William Tidgewell | Middletown, Conn. | June 2, 1857. |
| 18668 | Printing, engraved metal plates for, preparation of. | John M. Batchelder and Luther L. Smith. | Cambridge, Mass. | Nov. 24, 1857. |
| | | | New York, N. Y. | |

XVIII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of Patent. |
|-------|---|--|------------------------|---------------------------------------|
| 17239 | Printing fabrics, rollers or cylinders for, method of constructing. | Richard Ford Sturges | Birmingham, England | May 5, 1857; England Oct. 16, 1856. |
| 16952 | Printing from engraved plates, machine for. | Linus Stewart and John McClelland, assignors to McClelland & McClelland. | Washington, D. C. | Mar. 31, 1857. |
| 17319 | Printing in colors, method of. | William Croome | Brooklyn, N. Y. | May 19, 1857. |
| 17688 | Printing-ink. | George Matthews | Montreal, Canada East. | June 30, 1857. |
| 18504 | Printing-machine. | Samuel W. Francis | New York, N. Y. | Oct. 27, 1857; England July 15, 1857. |
| 18795 | Printing-machine, card. | James S. Moody, assignor to T. F. & J. F. Randolph. | Cincinnati, Ohio | Dec. 1, 1857. |
| 17322 | Printing-machines, calico, blanket for. | John Fallon | Lawrence, Mass. | May 19, 1857. |
| 17308 | Printing, painting, &c., canvas for, method of preparing. | Elisha Lee | Baltimore, Md. | May 12, 1857. |
| 18056 | Printing, photo-galvano-graphic process for. | Paul Pretsch | Austria | Aug. 25, 1857. |
| 18477 | Printing-press. | John H. Utter | New York, N. Y. | Oct. 20, 1857. |
| 18744 | Printing-press. | John Henry | Vevay, Ind. | Dec. 1, 1857. |
| 18812 | Printing-press. | Charles W. Hawkes | Boston, Mass. | Dec. 8, 1857. |
| 17499 | Printing-press, card. | Charles E. Emery | Canadaigua, N. Y. | June 9, 1857. |
| 17036 | Printing-press, engraved plate. | M. C. Gritzner, assignor to M. J. Gritzner | Washington, D. C. | April 14, 1857. |
| 16861 | Printing-press, hand. | Francis S. Coburn, assignor to W. W. Meser and George F. Gray. | Ipswich, Mass. | Mar. 17, 1857. |
| 18557 | Printing-press, hand. | Samuel J. Smith | New York, N. Y. | Nov. 3, 1857. |
| 18907 | Printing-press, hand. | J. M. Jones | Palmyra, N. Y. | Dec. 22, 1857. |
| 16826 | Printing-press, rotary. | John C. Davis and William Miller | Elizabethtown, N. J. | Mar. 17, 1857. |
| 16837 | Printing-presses. | Horace Holt | Winchester, Mass. | Mar. 17, 1857. |
| 17405 | Printing-presses. | S. D. Learned, assignor to A. C. Learned | Boston, Mass. | May 26, 1857. |
| 17418 | Printing-presses. | Jason L. Burdick | New York, N. Y. | June 2, 1857. |
| 17463 | Printing-presses. | Daniel K. Winder | Cincinnati, Ohio | June 2, 1857. |
| 17615 | Printing-presses. | Franklin L. Bailey | Boston, Mass. | June 23, 1857. |
| 18567 | Printing-presses. | Mervin Davis, assignor to Peter G. Bergen | New York, N. Y. | Nov. 3, 1857. |
| 18545 | Printing-presses. | George P. Gordon | New York, N. Y. | Nov. 3, 1857. |
| 18618 | Printing-presses. | Stephen Wilcox, Jr. | Westerly, R. I. | Nov. 10, 1857. |
| 17549 | Printing-presses, card. | Franklin L. Bailey | Boston, Mass. | June 16, 1857. |



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| 18599 | Printing-presses, feeding paper to..... | Richard M. Hoe..... | New York, N. Y..... | Nov. 10, 1857. |
| 18640 | Printing-presses, fly-frames, mode of operating. | Richard M. Hoe..... | New York, N. Y..... | Nov. 17, 1857. |
| 18657 | Printing-presses, hand..... | Jedediah Morse, assignor to the S. P. Rug- gles Power Press Manufacturing Company. | Canton, Mass..... | Oct. 27, 1857. |
| 17824 | Printing presses, inking-rollers for..... | E. E. Barrett..... | Milwaukee, Wis..... | July 21, 1857. |
| 17449 | Printing-presses, oedilating..... | Charles Potter, Jr..... | Westerly, R. I..... | June 2, 1857. |
| 17643 | Printing-presses, power..... | Jedediah Morse, assignor to S. P. Buggles Power Press Manufacturing Co. | Canton, Mass..... | June 9, 1857. |
| 17398 | Printing-presses, registering apparatus for..... | Gordon McKay..... | Boston, Mass..... | May 26, 1857. |
| 18052 | Printing-presses, wetting and cutting paper for, machine for..... | M. S. Beach..... | Brooklyn, N. Y..... | Aug. 25, 1857. |
| 16691 | Printing-stamp..... | William H. Elliot..... | Plattsburg, N. Y..... | Feb. 10, 1857. |
| 16641 | Printing-stamp..... | William H. Elliot..... | Plattsburg, N. Y..... | Feb. 17, 1857. |
| 17340 | Printing, stencil-plate..... | Samuel T. Sanford..... | Fall River, Mass..... | May 19, 1857. |
| 17194 | Printing subscribers' names on newspapers, machines for..... | Stephen D. Carpenter..... | Madison, Wis..... | May 6, 1857. |
| Seal for car-doors, &c. (See Class X, letter C) | | | | |
| Seal for railroad freight-cars, &c. (See Class X, letter C.) | | | | |
| 16856 | Seals, metallic..... | J. Wappenstein..... | Philadelphia, Pa..... | Mar. 17, 1857. |
| 18066 | Shears, vibrating..... | John Toulmin..... | Worcester, Mass..... | Aug. 26, 1857. |
| 16608 | Stamp, hand..... | P. A. Ramsay..... | Boston, Mass..... | Feb. 10, 1857. |
| 16731 | Stamp, hand..... | Horace Holt..... | Winchester, Mass..... | Mar. 3, 1857. |
| 16712 | Stamp, hand..... | Leonard Bailey..... | Winchester, Mass..... | Mar. 3, 1857. |
| 18249 | Stamp, hand..... | T. J. W. Robertson..... | New York, N. Y..... | Sept. 22, 1857. |
| 17587 | Stamp, postage, and label-sticker..... | Coleman Sellers..... | Philadelphia, Pa..... | June 16, 1857. |
| 18947 | Stamps, hand..... | E. E. Barrett..... | Salem, Mass..... | Dec. 29, 1857. |
| 16962 | Stereoscopic views, apparatus for exhibiting..... | Alexander Beckers..... | New York, N. Y..... | April 7, 1857. |
| 18209 | Tracing-muslin, composition for preparing..... | Jesse K. Park..... | Marlborough, N. Y..... | Sept. 15, 1857. |
| 16947 | Type, composing and distributing, machine for..... | William H. Houston..... | Belfast, Me..... | Mar. 31, 1857. |
| 16743 | Type, composing, machines for..... | William H. Mitchell..... | Brooklyn, N. Y..... | Mar. 3, 1857. |
| 18264 | Type, distributing, machine for..... | William H. Mitchell..... | Brooklyn, N. Y..... | Sept. 22, 1857. |
| 18176 | Type setting and distributing machine..... | Timothy Alden..... | New York, N. Y..... | Sept. 15, 1857. |
| 17218 | Violin-attachment..... | Andrew Hett..... | Augusta, Ga..... | May 5, 1857. |
| 18644 | Violin-attachment..... | Jackson Gorham..... | Baldstown, Ga..... | May 3, 1857. |
| 17324 | Violas..... | Bradley Fite..... | Charlton, Mass..... | May 19, 1857. |
| 17615 | Watch and locket rims, constructing..... | Henry A. Phillips..... | Providence, R. I..... | June 9, 1857. |
| 18033 | Watch-keys, combination of, with finger-rings..... | Ethel Bliss..... | Newark, N. J..... | Aug. 25, 1857. |
| 18213 | Watch-maker's lathe..... | Roswell H. St. John..... | Bellevue, Ohio..... | Sept. 15, 1857. |
| 16811 | Watch-maker's lathe, chuck for..... | William Stephens..... | Richmond, Ind..... | Mar. 10, 1857. |

CLASS XIX.—FIRE-ARMS AND IMPLEMENTS OF WAR, and parts thereof, including the manufacture of shot and gunpowder.

| No. | Inventions or discoveries. | Patentees. | Residences. | Date of patent. |
|-------|---|--|----------------------------|--|
| 17329 | Battery, centrifugal..... | Albert Potts..... | Philadelphia, Pa..... | May 19, 1857. |
| 18876 | Bayonet-fastening..... | James N. Ward, (U. S. A.)..... | New York, N. Y..... | Dec. 16, 1857. |
| 16819 | Bomb for killing whales..... | M. Scholfeld, and J. W. Wight, assign- ors to Nathan Scholfeld..... | Norwich, Conn..... | Mar. 10, 1857, rela- sued July 7, 1857. |
| 17370 | Bomb-lance..... | Julius Gruchos and Selmar Eggers..... | New Bedford, Mass..... | May 26, 1857. |
| 18824 | Bomb-lance, cushion for wings of..... | Nathan Scholfeld..... | Norwich, Conn..... | Dec. 8, 1857. |
| 17173 | Bomb-lances..... | Rufus Sibley..... | Greenville, Conn..... | April 28, 1857. |
| 18424 | Bomb-shell..... | Samuel Driver, assignor to himself, Isaac V. Culin, and Joel B. Sutherland..... | Philadelphia, Pa..... | Oct. 13, 1857. |
| 18616 | Bullet-machine..... | William H. Ward..... | Auburn, N. Y..... | Nov. 10, 1857. |
| 16910 | Bullet-mould..... | Henry L. De Zeng..... | Geneva, N. Y..... | Mar. 31, 1857. |
| 16327 | Bullet-moulds..... | Tristram Campbell and Henry B. Poorman..... | St. Louis, Mo..... | Jan. 6, 1857. |
| 16629 | Bullets, patching, mode of..... | Frederick D. Newbury, assignor to Rich- ard Varick De Witt, jr..... | Albany, N. Y..... | Feb. 10, 1857. |
| 17920 | Cannon, mode of discharging..... | Joiah Dodge..... | Dummerston, Vt..... | Aug. 4, 1857. |
| 18117 | Cap-carriers, percussion..... | George W. Baker, assignor to himself and Abijah French..... | Burlington, Vt..... | Sept. 1, 1857. |
| 16587 | Caps, percussion, machine for ramming..... | Charles Hicks..... | Haverstraw, N. Y..... | Feb. 10, 1857. |
| 16646 | Caps, percussion, machine for varnishing..... | Charles Hicks..... | Haverstraw, N. Y..... | Feb. 17, 1857. |
| 17792 | Cartridge, shot..... | William B. Johns..... | United States army..... | July 14, 1857. |
| 17287 | Cartridges..... | Edward Lindner..... | New York, N. Y..... | May 12, 1857. |
| 17702 | Cartridges..... | Gilbert Smith..... | Bethlehem Falls, N. Y..... | June 30, 1857. |
| 18217 | Cartridges, ball..... | Samuel Wells..... | Astoria, N. Y..... | Sept. 15, 1857. |
| 18143 | Cartridges for breech-loading fire-arms..... | J. Durvill Greene..... | Cambridge, Mass..... | Sept. 8, 1857. |
| 16367 | Fire-arm..... | Ethan Allen..... | Worcester, Mass..... | Jan. 13, 1857. |
| 17644 | Fire-arm, breech-loading..... | Gilbert Smith..... | Bethlehem Falls, N. Y..... | June 23, 1857. |
| 17642 | Fire-arm, breech-loading..... | John P. Schenkl..... | Boston, Mass..... | June 23, 1857. |
| 17366 | Fire-arm, repeating..... | W. W. Marston..... | New York, N. Y..... | May 26, 1857. |
| 18396 | Fire-arm, revolving..... | Ethan Allen..... | Worcester, Mass..... | Dec. 15, 1857. |
| 16375 | Fire-arms..... | Francis S. Brettell and Joseph B. Frieble..... | Allegheny City, Pa..... | Feb. 10, 1857. |
| 16946 | Fire-arms..... | Sewell K. Lovewell..... | Gardner, Mass..... | Mar. 17, 1857. |
| 17126 | Fire-arms..... | G. A. Blitkowski..... | New York, N. Y..... | April 28, 1857. |

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| 17143 | Fire-arms..... | Josiah Ella..... | Pittsburg, Pa..... | April 26, 1857. |
| 17253 | Fire-arms..... | John B. Reed..... | Tuscaloosa, Ala..... | May 5, 1857. |
| 17322 | Fire-arms..... | Edward Lindner..... | New York, N. Y..... | May 26, 1857. |
| 17698 | Fire-arms..... | Jacob Shaw, jr..... | Hinckley, Ohio..... | June 30, 1857. |
| 17904 | Fire-arms..... | James Warner..... | Springfield, Mass..... | July 28, 1857. |
| 16568 | Fire-arms, accelerating..... | Asel Lyman to Accelerating Fire-arms Com- pany..... | New York, N. Y..... | Feb. 8, 1857. |
| 18472 | Fire-arms, breech-loading..... | Chauncy D. Skinner and Dennis Tryon..... | Haddam, Conn..... | Oct. 20, 1857. |
| 18634 | Fire-arms, breech-loading..... | J. Durell Greene..... | Cambridge, Mass..... | Nov. 17, 1857. |
| 16797 | Fire-arms, breech-loading, nipples for dis- charging or withdrawing cartridges from. | William Cleveland Hicks..... | New Haven, Conn..... | Mar. 10, 1857. |
| 16603 | Fire-arms, flint-lock, mode of altering, to per- cussion. | James N. Ward..... | U. S. Army..... | Jan. 27, 1857. |
| 18387 | Fire-arms, hair triggers for..... | P. F. Charpie..... | Mount Vernon, Ill..... | Oct. 13, 1857. |
| 18418 | Fire-arms, lock for..... | Michael Tromley..... | Mount Vernon, Ill..... | Oct. 13, 1857. |
| 16411 | Fire-arms, locks for..... | Alfred Tonks..... | Boston, Mass..... | Jan. 13, 1857. |
| 16716 | Fire-arms, lubricating, mode of..... | Samuel Colt..... | Hartford, Conn..... | Mar. 3, 1857. |
| 17044 | Fire-arms, many-chambered breech, rammer for. | James Kerr..... | London, England..... | April 14, 1857; Eng- land, Sept. 26, 1856 |
| 16683 | Fire-arms, many-chambered rotating breech..... | Samuel Colt..... | Hartford, Conn..... | Feb. 24, 1857; Eng- land, Mar. 3, 1856. |
| 18678 | Fire-arms, many-chambered rotating breech..... | Samuel Colt..... | Hartford, Conn..... | Nov. 24, 1857; Eng- land, April 23, 1853. |
| 16761 | Fire-arms, portable..... | John Tilton and William Floyd..... | Rock House, Ohio..... | Mar. 3, 1857. |
| 16477 | Fire-arms, repeating..... | Heinrich Genhart..... | Liege, Belgium..... | Jan. 27, 1857; Bel- gium, Aug. 31, 1853. |
| 18486 | Fire-arms, repeating, mode of priming..... | George R. Crooker, assignor to George G. Martin..... | New York, N. Y..... | Oct. 20, 1857. |
| 17032 | Fire-arms, revolving..... | Josiah Ella..... | Pittsburg, Pa..... | April 14, 1857. |
| 17359 | Fire-arms, revolving..... | Fordyce Beals..... | New Haven, Conn..... | May 26, 1857. |
| 17261 | Fire-arms, windage in, mode of overcoming the. | Ambrose E. Burnside..... | Bristol, R. I..... | May 12, 1857. |
| 17863 | Fuse-making machine..... | A. F. Andrews..... | Avon, Conn..... | July 28, 1857. |
| 16634 | Gun-lock, hair-triggered, self-acting..... | Jonathan Altman..... | Armstrong county, Pa..... | Feb. 17, 1857. |
| 17733 | Gun-locks, self-priming..... | Mahlon J. Gallagher..... | Savannah, Geo..... | July 7, 1857. |
| 16860 | Gun-muzzle, loading, piston for..... | John T. Foeter and Jacob J. Banta, as- signors to themselves and James H. Banta..... | Jersey City, N. J..... | Mar. 17, 1857. |
| 17321 | Gunpowder..... | Lammot, Dupont..... | Wilmington, Del..... | May 19, 1857. |
| 17391 | Gunpowder. (See Class IV, letter P.) | | | |

XIX.—*List of patents for inventions, 1857.*

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|--------------------------|-----------------|
| 16944 | Gunpowder-keg | James Wilson, Charles Green, and William Wilson, jr. | Brandywine, Del. | Mar. 31, 1857. |
| 17915 | Gun, walking-stick | Ira Buckman, jr. | New York, N. Y. | Aug. 4, 1857. |
| 16377 | Ordnance, rifling, mode of | Horace E. Dimick | St. Louis, Mo. | Jan. 13, 1857. |
| 16571 | Pistols | William S. Butler, assignor to Butler, Sugden, & Co. | Rocky Hill, Conn. | Feb. 3, 1857. |
| 18016 | Powder, percussion | Magnus Kling | Reading, Pa. | Aug. 18, 1857. |
| 18707 | Projectiles for fire-arms | John B. Read | Tuscaloosa, Ala. | Nov. 24, 1857. |
| 17407 | Projectile for killing whales | Rufus Sibley, assignor to Christopher C. Brand. | Norwich, Conn. | May 26, 1857. |
| 18049 | Projectile for rifled cannon | T. T. S. Laidley, (U. S. A.) | Fayetteville, N. C. | Aug. 25, 1857. |
| 16768 | Projectiles | Malcom Shaw | Sandwich, Mass. | Mar. 3, 1857. |
| 17312 | Projectiles | Christopher C. Brand | Norwich, Conn. | May 19, 1857. |
| 18568 | Projectiles | Henry Bates | New London, Conn. | Nov. 10, 1857. |
| 16765 | Projectiles for rifled cannon | John M. Sigourney | Watertown, N. Y. | Mar. 3, 1857. |
| 17935 | Projectiles for rifled cannon | Theodore T. S. Laidley, (U. S. A.) | Fayetteville, N. C. | Aug. 4, 1857. |
| 18401 | Projectiles for rifled ordnance | James H. Merrill | Baltimore, Md. | Oct. 13, 1857. |
| 17886 | Projectiles for smooth-bored guns | John L. McConnell | Jacksonville, Ill. | July 28, 1857. |
| 18866 | Projectiles, shells and other, fuses of | Nathan Scholfield | Norwich, Conn. | Dec. 16, 1857. |

CLASS XX.—SURGICAL AND MEDICAL INSTRUMENTS, including trusses, dental instruments, bathing-apparatus, &c.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---------------------------------------|---|--------------------|---|
| 16602 | Abdominal supporter | Julia M. Milligan | New Albany, Ind | Feb. 10, 1857; reissued Sept. 16, 1857. |
| 16485 | Auricle, acoustic | Edward G. Hyde | Irvington, N. J. | Jan. 27, 1857. |
| 17948 | Bath, shower, apparatus | Noah Warlick | Lafayette, Ala. | Aug. 4, 1857. |
| 18101 | Bath, shower, apparatus | William Meyer | Progress, N. J. | Sept. 1, 1857. |
| 17102 | Bathing-apparatus | L. H. Lefebvre | New Orleans, La. | April 21, 1857. |
| 17979 | Bathing-apparatus | John K. O'Neill | Kingston, N. Y. | Aug. 11, 1857. |
| 18349 | Baths, shower, appendages to | William Miller | Waltham, Mass. | Oct. 6, 1857. |
| 17956 | Corsets, spinal | Alanson Abbé | Boston, Mass. | May 26, 1857. |
| 18222 | Ecuma-giving apparatus | B. T. Babbitt | New York, N. Y. | Mar. 17, 1857. |
| 18016 | Eye-shading apparatus | Francis H. Jones | Federalburg, Md. | Aug. 18, 1857. |
| 17101 | Forceps, dental | J. A. McClelland | Louisville, Ky. | April 21, 1857. |
| 18021 | Hands, artificial, construction of | William Selpho | New York, N. Y. | Aug. 18, 1857. |
| 18020 | Inhaling-apparatus | John C. Schooley | Cincinnati, Ohio | Aug. 18, 1857. |
| 16479 | Lancet, spring | James W. W. Gordon | Catonville, Md. | Jan. 27, 1857. |
| 17994 | Lancets, spring | Jefferson T. Martin, administrator of William Parkinson, deceased. | Moundsville, Va. | Aug. 11, 1857. |
| 16360 | Legs, artificial | Benjamin W. Jewett | Gilford, N. H. | Jan. 6, 1857. |
| 18420 | Legs, artificial | O. D. Wilcox | Easton, Pa. | Jan. 13, 1857. |
| 17888 | Legs, artificial | R. H. Nicholas and Douglass Bly | Rochester, N. Y. | July 28, 1857. |
| 17262 | Lozenges, machines for making | O. R. and S. E. Chase | Boston, Mass. | May 12, 1857. |
| 17095 | Medicinal acenta, means for inhaling | Alonzo G. Hull | New York, N. Y. | April 21, 1857. |
| 16361 | Milking-shields | O. H. Needham | New York, N. Y. | Jan. 6, 1857. |
| 16396 | Nipple-shields | James Parker | Boston, Mass. | Jan. 13, 1857. |
| 17195 | Spinal-apparatus, surgical | J. H. H. and William J. Burge | Brooklyn, N. Y. | May 6, 1857. |
| 16680 | Syringe, cauterizing | Erastus T. Bussell | Shelbyville, Ind | Feb. 24, 1857. |
| 16956 | Syringe, enema | Charles H. Davidson and Harman E. Davidson, assignors to Charles H. Davidson. | Charlestown, Mass. | Mar. 31, 1857. |
| 17000 | Syringer, veterinary | William Somerville | Buffalo, N. Y. | April 7, 1857. |
| 18433 | Teeth, artificial | Alfred A. Bandy | Baltimore, Md. | Jan. 20, 1857. |
| 18482 | Teeth, artificial | George E. Hayes | Buffalo, N. Y. | Jan. 27, 1857. |
| 16708 | Teeth, artificial, casting plates for | Alfred A. Bandy | Baltimore, Md. | Mar. 3, 1857. |

XX.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|--|----------------------------------|-------------------|---|
| 17775 | Teeth, artificial, fastening, to the metallic plate. | Theodore H. and James P. Bredish | Utica, N. Y. | July 14, 1857. |
| 16784 | Teeth, artificial, of alloys, casting plates for. | Alfred A. Blandy | Baltimore, Md. | Mar. 10, 1857; ante-dated Mar. 3, 1857. |
| 18005 | Teeth, porcelain, setting. | Martin Luther Wright | Cleveland, Ohio. | Aug. 11, 1857. |
| 18708 | Trusses | J. W. Riggs | Plainfield, N. J. | Nov. 24, 1857. |
| 16497 | Trusses, hernial. | Samuel S. Ritter | Philadelphia, Pa. | Jan. 27, 1857. |
| 16835 | Trusses, hernial. | Ancel I. Hardin | Shelby, N. C. | Mar. 17, 1857. |
| 17670 | Uterine supporters. | W. E. Cooke | Philadelphia, Pa. | June 30, 1857. |
| 16478 | Vaccinating-instrument | James W. W. Gordon | Catonsville, Md. | Jan. 27, 1857. |

CLASS XXI.—WEARING APPAREL, ARTICLES FOR THE TOILET, &c., including instruments for manufacturing.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---------------------------------------|--|----------------------|--|
| 17725 | Button-holes, instruments for cutting | William Chicken | Boston, Mass. | July 7, 1857. |
| 18014 | Buttons, metal, manufacturing | Jared O. M. Ingemoll | Ithaca, N. Y. | Aug. 18, 1857. |
| 16909 | Buttons, sleeve. | John P. Derby | Boston, Mass. | Mar. 31, 1857. |
| 17082 | Bustles | Alexander Douglas | New York, N. Y. | April 21, 1857; ante-dated Jan. 6, 1857. |
| 18958 | Coats, instruments for drafting | Simeon Corley | Lexington, S. C. | Dec. 29, 1857. |
| 18859 | Combs | Thomas L. Calkins, assignor to Thomas L. Calkins and J. W. Bliss | Hartford, Conn. | Mar. 17, 1857. |
| 17416 | Garments, fastenings for | Jeremy W. Bliss | Hartford, Conn. | June 2, 1857. |
| 17103 | Hair, curling, instruments for | Mark M. Lewis | Albany, N. Y. | April 21, 1857. |
| 16640 | Pins, bosom | John P. Derby | South Reading, Mass. | Feb. 17, 1857. |
| 17857 | Pins, diaper | J. Hellmann, assignor to Ignatius Sturn | New York, N. Y. | July 21, 1857; reissued Nov. 10, 1857. |
| 17235 | Pocket safes or fastenings | George B. McIlroy | Corvington, Ky. | May 6, 1857. |

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|-------|----------------------------|--------------------------------|-------------------|---|
| 17553 | Pockets, safety | Honace Harris | Newark, N. J. | June 16, 1857. |
| 16538 | Razor-strops | E. K. Godfrey | New York, N. Y. | Feb. 10, 1857. |
| 16538 | Shirt-boom studs | John C. Derby | Cavendish, Vt. | Feb. 8, 1857. |
| 17241 | Skirts, ladies' | Helen C. Traphagen | New York, N. Y. | May 6, 1857. |
| 17602 | Skirts, ladies' | Edward F. Woodward | Brooklyn, N. Y. | June 16, 1857; reissued Sept. 29, 1857. |
| 18013 | Skirts, ladies', hoops for | Charles S. Goodman | Washington, D. C. | Aug. 18, 1857. |
| 18247 | Sleeve-fastener | David C. Pascock | Brooklyn, N. Y. | Sept. 22, 1857. |
| 17413 | Sleeve-fasteners | William A. Bates | Boston, Mass. | June 2, 1857. |
| 17345 | Stud or button, shirt | William Vogt and John J. Klink | Louisville, Ky. | May 19, 1857. |
| 16338 | Studs, bosom | J. Ferley Derby | Boston, Mass. | Jan. 6, 1857. |
| 16872 | Studs, shirt | John P. Derby | Cavendish, Vt. | Mar. 24, 1857. |
| 17060 | Studs, shirt | Dutec Wilcox | Povidence, R. I. | April 14, 1857. |
| 16472 | Tailors' measures | Lyman Derby | New York, N. Y. | Jan. 27, 1857. |
| 17600 | Umbrellas and parasols | James Willis | London, England | June 16, 1857; Eng-land, Mar. 24, 1855. |
| 18036 | Umbrellas and parasols | Sheldon Canfield | Derby, Conn. | Aug. 27, 1857. |
| 18500 | Umbrellas, cane | Heman Crosby, jr. | Waterbury, Conn. | Oct. 20, 1857. |
| 16340 | Umbrellas, folding | L. K. Seiden | Haddam, Conn. | Jan. 6, 1857. |
| 18445 | Wristband-fastener | Benjamin F. Grinnell | New York, N. Y. | Oct. 20, 1857. |

CLASS XXII.—MISCELLANEOUS.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|-------------------------------|---|--------------------|-----------------|
| 18326 | Alarm, pocket-book | William Stoddard | Lowell, Mass. | Dec. 8, 1857. |
| 16942 | Baby-jumpers | Marion J. Wellmann | New York, N. Y. | Mar. 31, 1857. |
| 16862 | Baby-walkers | Joseph Thomas, assignor to Joseph Thomas and Charles A. Durgin. | Brooklyn, N. Y. | Mar. 17, 1857. |
| 16970 | Baskets, construction of | Joel A. H. Ellis, assignor to Joel Woodbury, as trustee. | Springfield, Vt. | April 7, 1857. |
| 17631 | Baskets, fastening handles to | Anthony Fass | Philadelphia, Pa. | June 25, 1857. |
| 1862 | Bells, apparatus for ringing | James R. Baird | Vincennes, Ind. | Nov. 17, 1857. |
| 17836 | Bells, signal or alarm | George H. Hoagland | Port Jervis, N. Y. | July 21, 1857. |
| 18799 | Billiard-table cushions | John M. Brunswick | Cincinnati, Ohio | Dec. 8, 1857. |

XXII.—List of patents for inventions, 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. |
|-------|---|---|---------------------|-----------------|
| 18005 | Billiard-table cushions | H. W. Collender | New York, N. Y. | Dec. 8, 1857. |
| 18041 | Billiard-table cushions | Lew Decker. | Bergen, N. J. | Dec. 15, 1857. |
| 18374 | Blacking-boxes, implement for holding | W. & J. Cairns. | Jersey City, N. J. | Jan. 13, 1857. |
| 17431 | Block for blacking boots and shoes. | F. G. Harding | Boston, Mass. | June 2, 1857. |
| 16719 | Boxes, pasteboard for, machine for cutting. | E. E. Clarke. | New Haven, Conn. | Mar. 3, 1857. |
| | Boxes, receiving, for passengers' fares. (See Class X, letter B.) | | | |
| 18086 | Bottles, washing, machine for. | Henry N. Degraw | Watervliet, N. Y. | Sept. 1, 1857. |
| 17406 | Burglars' alarms | David Coon, assignor to himself and B. F. Chesbrough. | Ithaca, N. Y. | May 26, 1857. |
| 18236 | Burglars' alarms | Simson Coon. | Ithaca, N. Y. | Sept. 22, 1857. |
| 18292 | Burglars' alarms | E. M. & J. E. Mix. | Ithaca, N. Y. | Sept. 29, 1857. |
| 17504 | Camp-tents, frame for. | Benjamin Hinkley | Troy, N. Y. | June 9, 1857. |
| 16674 | Can, varnish. | Alonso Marshall, assignor to Benjamin Marsh. | Newark, N. J. | Feb. 17, 1857. |
| 18641 | Candy-twisting machine. | John Gardner. | Philadelphia, Pa. | Nov. 3, 1857. |
| 17163 | Canisters, metallic, for putting up paints, &c. | John W. Masury | Brooklyn, N. Y. | April 28, 1857. |
| 18706 | Cigar-lighters, machine for making. | H. Reimann | Hartford, Conn. | Nov. 24, 1857. |
| 18552 | Coffee, cleaning and polishing, method of. | William Newell | Philadelphia, Pa. | Nov. 3, 1857. |
| 17657 | Cork-machine | Edward Conroy | South Boston, Mass. | June 16, 1857. |
| 16466 | Corpee-preservers. | Samuel Cobb. | Cincinnati, Ohio | Jan. 27, 1857. |
| 18295 | Fire, buildings from, apparatus to protect. | Thomas Odion | Portsmouth, N. H. | Sept. 29, 1857. |
| 18262 | Fire-escape ladder | Henry Loewenberg. | New York, N. Y. | Sept. 22, 1857. |
| 16663 | Fireman's mask and respirator. | Israel P. Nelson, assignor to Israel P. Nelson and George N. Davis. | Cambridge, Mass. | Mar. 17, 1857. |
| 16626 | Fishing-rod reels | Edward Deacon, assignor to John Warrin. | Brooklyn, N. Y. | Feb. 10, 1857. |
| 17469 | Hominy-machines | Oscar F. Mayhew, assignor to W. H. Weeks and O. F. Mayhew. | Indianapolis, Ind. | June 2, 1857. |
| 18413 | Hominy-machines | Peter Siemens. | St. Louis, Mo. | Oct. 13, 1857. |
| 17264 | Honey, artificial. | Z. Corbin and G. Marlett. | Syracuse, N. Y. | May 12, 1857. |
| 17934 | Horses, device for protecting the necks of, from flies. | Ernst L. Kurts. | New York, N. Y. | Aug. 4, 1857. |

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|-------|--|--|----------------------------|---|
| 18991 | Horses, &c., across rivers, method of floating-- | Samuel P. Heintzelman..... | Newport Barracks, Ky | Nov. 24, 1857. |
| 17263 | Match-splints, cutting, machines for..... | Thomas Cook | New York, N. Y. | May 12, 1857. |
| 17316 | Matches, dipped, machine for gathering and depositing. | Thomas Cook | New York, N. Y. | May 19, 1857. |
| 18273 | Oysters, opening, apparatus for..... | Waldren Beach..... | Baltimore, Md..... | Sept. 29, 1857. |
| 17176 | Sack-holder, self-adjusting..... | Augustus Stoner | Mount Joy, Penn..... | April 28, 1857; ad- ditional improve- ment Dec. 29, 1857. |
| 18709 | Scissors-sharpener | William E. Roberts | Orange, Conn | Nov. 24, 1857. |
| 17147 | Skates | John A. Winslow | Roxbury, Mass | April 28, 1857. |
| 17414 | Skates | B. W. Beeson..... | Philadelphia, Penn | June 2, 1857. |
| 18686 | Skates | Stockton H. Evans and L. Gentech..... | Philadelphia, Penn | Nov. 24, 1857. |
| 16653 | Skates, fastening, mode of..... | Henry Pickford..... | Boston, Mass | Feb. 17, 1857. |
| 17019 | Skates, school | Samuel H. Burrell..... | New York, N. Y. | April 14, 1857. |
| 16549 | Soda-fountains, apparatus for containing and dispensing sirups for. | James B. Nichols..... | Haverhill, Mass | Feb. 3, 1857. |
| 17168 | Street-sprinkler | C. O. Luce..... | Brandon, Vt | April 28, 1857. |
| 18416 | Street-sweepers | W. W. St. John and Isaac Brown..... | Leonardsville, N. Y. | Oct. 13, 1857. |
| 18195 | Street-sweeping machines..... | John Critcherson | Boston, Mass | Sept. 15, 1857. |
| 18664 | Street-sweeping machines..... | David Shattuck, assignor to himself, John S. Shattuck, Jacob Morrill, and William P. Marshall..... | Boston, Mass | Nov. 17, 1857. |
| 17811 | Trap, fly | William T. Shannon | Greensboro', Ga..... | July 14, 1857. |
| 18261 | Trap, fly | S. R. Wilmot | Watertown, Conn | Sept. 22, 1857. |
| 17803 | Trap-book, self-setting..... | Donald McLean | Boston, Mass | July 14, 1857. |
| 17570 | Traps, animal | Henry Hackman, jr..... | Peques, Penn | June 16, 1857. |
| 18092 | Traps, animal | George Hart | Granger, Ohio..... | Sept. 1, 1857. |
| 16335 | Traps, animal, manufacture of..... | C. Jilleon..... | Worcester, Mass | Jan. 6, 1857. |
| 17297 | Traps for animals..... | Frederick Reuth..... | Worcester, Conn | May 12, 1857. |
| 16516 | Vermin-destroyer..... | Welcome Whitaker, assignor to Henry L. Palmer and Julius A. Skilton. | Troy, N. Y..... | Jan. 27, 1857. |

LIST OF REISSUES GRANTED DURING THE YEAR 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. | Date of release. |
|-----|---|---|--|--|------------------|
| 493 | Abdominal supporter | Julia M. Milligan..... | New Albany, Ind..... | Feb. 10, 1857..... | Sept. 16, 1857. |
| 502 | Acid, sulphuric, manufacture of..... | Alfred Monnier..... | Camden, N. J..... | Aug. 11, 1857..... | Oct. 6, 1857. |
| 420 | Axle-box rollers..... | G. W. Gelsendorff and J. C. Gelsendorff..... | Indianapolis, Ind. -- } Cincinnati, Ohio... } | Feb. 6, 1855..... | Jan. 13, 1857. |
| 478 | Bomb for killing whales..... | Nathan Scholfeld and William W. Wight, assignors to Nathan Scholfeld. | Norwich, Conn..... | March 10, 1857..... | July 7, 1857. |
| 421 | Bonnet-fronts, moulds for pressing..... | Whitten E. Kidd..... | New York, N. Y..... | Nov. 28, 1854..... | Jan. 13, 1857. |
| 427 | Bonnets and bonnet-frames, machines for pressing..... | William Osborn..... | Louisville, Ky..... | Aug. 19, 1856..... | Feb. 17, 1857. |
| 483 | Boot-crimps | Josiah Copeland, assignor to Abraham Thayer, assignor to Josiah Copeland. John Chilcott and Robert Snell..... | Weymouth, Mass..... | Jan. 20, 1844..... | Aug. 11, 1857. |
| 477 | Boots and shoes, cutting out the "up- pers" of, method of..... | John Chilcott and Robert Snell..... | Brooklyn, N. Y..... | Sept. 13, 1853; Bel- gium, Sept. 16, '52; England, Sept. 30, 1852; France, Sept. 17, 1852. | July 7, 1857. |
| 431 | Caldron and furnace combined, mode of constructing a, for the use of agricul- turists and others..... | Jordan L. Mott..... | Mott Haven, N. Y..... | Dec. 1, 1840; ex- tended Dec. 1, 1854; reissued Feb. 6, 1856. | Feb. 24, 1857. |
| 468 | Car-wheels, cast-iron..... | Anson Atwood..... | Troy, N. Y..... | May 15, 1847..... | June 9, 1857. |
| 497 | Car-wheels, cast-iron, (B)..... | Anson Atwood..... | Troy, N. Y..... | May 15, 1857..... | Sept. 22, 1857. |
| 498 | Car-wheels, cast-iron, (C)..... | Anson Atwood..... | Troy, N. Y..... | May 15, 1847..... | Sept. 22, 1857. |
| 434 | Carding-engines | A. D. Shattuck..... | Grafton, Mass..... | Sept. 23, 1856..... | Mar. 10, 1857. |
| 490 | Carding-engines | William H. Walton..... | New York, N. Y..... | Dec. 9, 1856; reissued Jan. 13, 1857. | Sept. 1, 1857. |
| 422 | Carding-engines, cleaning the top-flats of..... | William H. Walton..... | New York, N. Y..... | Dec. 9, 1856; reissued Jan. 13, 1857. | Sept. 1, 1857. |
| 509 | Carding-machines | H. N. Gambrill and S. F. Burgee..... | Woodbury Mills, Md..... | Feb. 27, 1855; ante- dated Aug. 12, 1854. | Nov. 17, 1857. |
| 514 | Carding-machines, cleaning top-cards of..... | Horace Woodman..... | Bliddeford, Me..... | Aug. 1, 1854..... | Dec. 8, 1857. |

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|-----|--|---|--------------------------|--|-----------------|
| 437 | Carriages, running-gear of | Gustavus L. Hausknecht | New Haven, Conn | Jan. 19, 1852 | Mar. 17, 1857. |
| 515 | Carriages, wheels for | Thomas Brownfield | George's Township, Penn. | Aug. 19, 1856 | Dec. 15, 1857. |
| 479 | Chairs, railway, bending the lips of wrought-iron, machine for. | Samuel A. Cox, deceased, assignor to Sawyer & Hall, assignors to the New York Wrought-Iron Railroad-chair Co. | New York, N. Y. | Aug. 28, 1849 | July 14, 1857. |
| 492 | Cloth, elastic gore | Charles Winslow | Lynn, Mass. | Aug. 4, 1857 | Sept. 15, 1857. |
| 440 | Cloth, web for, machine for forming the, of wool, hair, or other suitable substances, without spinning or weaving. | Charlotte Arnold, administratrix, and Peter U. Morgan, administrator, of John Arnold, deceased, and George G. Bishop, assignors to the Union Manufacturing Company. | Norwalk, Conn. | Oct. 20, 1836; extended Oct. 17, 1850; extended by act of Congress, Mar. 28, 1854. | Mar. 17, 1857. |
| 429 | Clothes-pins, machine for making | George W. Parker. | Fittwilliam, N. H. | Mar. 18, 1856 | Feb. 17, 1857. |
| 423 | Cord, making, machinery for | William E. Nichols | East Hadam, Conn. | Dec. 11, 1849 | Jan. 20, 1857. |
| 504 | Cordage-machinery | Henry Pearce | Cincinnati, Ohio. | May 22, 1855 | Nov. 3, 1857. |
| 465 | Cowl or draught-accelerator for steamers. | Peter O. Guion | Cincinnati, Ohio. | Nov. 4, 1856 | May 26, 1857. |
| 507 | Diaper-pins | J. Hellmann, assignor to Ignatius Sturn. | New York, N. Y. | July 21, 1857 | Nov. 10, 1857. |
| 457 | Drills, seed | James Selby | Lancaster, Ohio | June 19, 1855 | April 21, 1857. |
| 472 | Fence, portable field | James G. Hunt | Cincinnati, Ohio. | Dec. 16, 1856 | June 30, 1857. |
| 474 | Ferry-boats, line, or flying bridges, means for guiding. | William A. Jordan | Thibodeaux, La. | Aug. 5, 1856 | June 16, 1857. |
| 433 | Fire-arms, breech-loading | B. F. Joslyn | Worcester, Mass. | Aug. 28, 1855 | Mar. 3, 1857. |
| 446 | Furnaces for burning wet fuel | Moses Thompson | New York, N. Y. | April 10, 1856; reissued Oct. 7, 1856. | Mar. 31, 1857. |
| 467 | Gas-burners | Charles H. Johnson | Boston, Mass. | June 26, 1855; additional improvement Mar. 18, 1856. | June 2, 1857. |
| 448 | Gauges, carpenters' | Joel Bryant | Brooklyn, N. Y. | Aug. 19, 1856 | April 14, 1857. |
| 511 | Harvesters, grain and grass, (A) | William H. Seymour, assignor to himself and Dayton S. Morgan. | Brookport, N. Y. | Dec. 14, 1853; antedated Oct. 28, 1853. | Dec. 1, 1857. |
| 512 | Harvesters, grain and grass, (Division B) | William H. Seymour, assignor to himself and Dayton S. Morgan. | Brookport, N. Y. | Dec. 14, 1853; antedated Oct. 28, 1852. | Dec. 1, 1857. |
| 513 | Harvesters, grain and grass, (Division C) | William H. Seymour, assignor to himself and Dayton S. Morgan. | Brookport, N. Y. | Dec. 14, 1853; antedated Oct. 28, 1852. | Dec. 1, 1857. |
| 466 | Harvesters, grass | William F. Ketchum | Buffalo, N. Y. | Feb. 10, 1853; reissued Feb. 28, 1854. | June 2, 1857. |
| 476 | Hat-bodies, machines for manufacturing. | Lansing E. Hopkins | New York, N. Y. | Dec. 7, 1853 | June 30, 1857. |
| 428 | Hosiery, manufacture of | William H. McNary | Brooklyn, N. Y. | Dec. 23, 1856 | Feb. 17, 1857. |
| 432 | Hullers, rice | Peter McKinlay | Charleston, S. C. | April 1, 1851 | Aug. 11, 1857. |

List of reissues for 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. | Date of reissue. |
|-----|---|---|-------------------|--|------------------|
| 505 | Iron, manufacture of. | William Kelly | Eddyville, Ky. | June 23, 1857 | Nov. 3, 1857. |
| 495 | Journal-box, glass. | Edward Campbell | Columbus, Ohio. | Aug. 21, 1855 | Aug. 26, 1857. |
| 503 | Lamp, locomotive. | Irvin A. Williams | Utica, N. Y. | Oct. 10, 1854 | Oct. 27, 1857. |
| 470 | Locomotive fire-box. | Ross Winans and Thomas Winans | Baltimore, Md. | May 9, 1854 | June 16, 1857. |
| 471 | Locomotive-tenders. | Ross Winans and Thomas Winans | Baltimore, Md. | May 23, 1854; ante-dated May 9, 1854. | June 16, 1857. |
| 454 | Looms | Warren W. Dutcher | Milford, Mass. | June 27, 1846 | April 21, 1857. |
| 489 | Looms | Daniel W. Snell and Stephen S. Bartlett. | Woonsocket, R. I. | Jan. 13, 1857 | Sept. 1, 1857. |
| 494 | Looms | William V. Gee, assignor to the Atwater and Bristol Manufacturing Company, assignors to the Nashawannuck Manufacturing Company. | New Haven, Conn. | Feb. 27, 1855 | Sept. 15, 1857. |
| 461 | Looms for weaving Brussels carpets, &c. | E. B. Bigelow | Boston, Mass. | Mar. 19, 1844; reissued Oct. 9, 1849. | May 5, 1857. |
| 492 | Looms for weaving pile-fabrics | E. B. Bigelow | Boston, Mass. | Nov. 15, 1853 | Feb. 24, 1857. |
| 436 | Looms for weaving pile-fabrics | Erastus B. Bigelow | Boston, Mass. | Dec. 18, 1855 | Mar. 17, 1857. |
| 475 | Looms for weaving piled fabrics. | Mertoun C. Bryant | Lowell, Mass. | Mar. 19, 1850 | June 30, 1857. |
| 462 | Metallic surfaces, particularly saw-plates, machinery for grinding and polishing. | Richard M. Hoo. | New York, N. Y. | May 30, 1842; extended May 26, 1856. | May 5, 1857. |
| 473 | Mills, flouring. | Joseph Weis | Bordentown, N. J. | Jan. 29, 1856 | June 16, 1857. |
| 481 | Mills, flouring, distributing apparatus of. | Alfred T. Clark | Lancaster, Pa. | June 30, 1857 | Aug. 4, 1857. |
| 463 | Mills, hanging shafts in | Joseph Bancroft, executor of Edward Bancroft, deceased. | Wilmington, Del. | Oct. 9, 1849 | May 12, 1857. |
| 484 | Musical instruments, reed | Jeremiah Carhart | New York, N. Y. | Dec. 28, 1846; reissued June 24, 1856. | Aug. 18, 1857. |
| 487 | Ovens | William E. Treadwell and William Hus-tace, executors of Ephraim Treadwell, deceased. | New York, N. Y. | July 19, 1853 | Aug. 25, 1857. |
| 464 | Paper, drying and pressing, machine for. | John North | Middletown, Conn. | April 14, 1857 | May 19, 1857. |
| 480 | Photographic pictures, bituminous ground for. | V. M. Griswold | Lancaster, Ohio | Oct. 21, 1856 | Feb. 24, 1857. |

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| 500 | Photographs from glass to paper, process for removing. | Edward Howell | Ashabula, Ohio. | May 19, 1857. | Sept. 22, 1857. |
| 456 | Picture-cases, hinge for. | Alfred P. Critchlow, assignor to Alfred P. Critchlow & Co. | Florence, Mass. | Oct. 14, 1856. | April 21, 1857. |
| 444 | Planting-machines | James A. Woodbury | Winchester, Mass. | Feb. 7, 1854. | Mar. 31, 1857. |
| 499 | Planters, seed. | Solomon T. Holly | Rockford, Ill. | June 16, 1857. | Sept. 22, 1857. |
| 508 | Planters, seed. | George W. Brown | Galesburg, Ill. | May 8, 1855. | Nov. 10, 1857. |
| 506 | Ploughs | George Watt. | Richmond, Va. | Dec. 9, 1856. | Nov. 10, 1857. |
| 455 | Refrigerators | D. W. C. Sanford | St. Louis, Mo. | Nov. 13, 1855. | April 21, 1857. |
| 426 | Reapers, raking-attachment for. | M. G. Hubbard | Penn Yan, N. Y. | Sept. 2, 1856. | Feb. 3, 1857. |
| 449 | Reaping-machines (A.) | Obed Hussey | Baltimore, Md. | Aug. 7, 1847. | April 14, 1857. |
| 450 | Reaping-machines (Division B) | Obed Hussey | Baltimore, Md. | Aug. 7, 1847. | April 14, 1857. |
| 451 | Reaping-machines (Division C) | Obed Hussey | Baltimore, Md. | Aug. 7, 1847. | April 14, 1857. |
| 491 | Roofing-composition | James West | Syracuse, N. Y. | Oct. 30, 1855. | Sept. 8, 1857. |
| 458 | Saw-mill for resawing boards and other lumber. | Pearson Crosby. | Fredonia, N. Y. | November 3, 1841; reissued March 10, 1849; extended October 30, 1855. | April 28, 1857. |
| 435 | Saw-mills | Lemuel Hedge, assignor to George W. Hedge, assignor to William P. Wood and Samuel De Vaughan. | Washington, D. C. | May 8, 1849. | Mar. 10, 1857. |
| 424 | Sawing-machine, portable steam. | Samuel R. Willmot. | New York, N. Y. | Aug. 14, 1855. | Jan. 27, 1857. |
| 447 | Sawing machine, cross-cut, portable steam, (Division of No. 424.) | Samuel R. Willmot. | New York, N. Y. | Aug. 14, 1855. | April 7, 1857. |
| 438 | Sawing off logs, machine for | Cornelia Waterman, administratrix of the late Stephen Waterman, assignee of Isaac D. Russell, joint inventor and patentee. | Brooklyn, N. Y. | May 19, 1843. | Mar. 17, 1857. |
| 425 | Saws, reciprocating, mode of driving | Isaac Brown | Baltimore, Md. | July 19, 1853. | Feb. 3, 1857. |
| 445 | Scales, platform. | Thaddeus Fairbanks | St. Johnsbury, Vt. | Jan. 13, 1857. | Mar. 31, 1857. |
| 452 | Sawing-machines, (Division A.) | John A. Bradshaw, assignor to Joseph P. Martin. | Philadelphia, Pa. | Nov. 28, 1848. | April 14, 1857. |
| 453 | Sawing-machines, (Division B.) | John A. Bradshaw, assignor to Joseph P. Martin. | Philadelphia, Pa. | Nov. 28, 1848. | April 14, 1857. |
| 469 | Ships' blocks. | Cornelia Waterman, administratrix of the late Stephen Waterman, and Isaac D. Russell. | Brooklyn, N. Y. | Jan. 31, 1844. | June 9, 1857. |
| 501 | Skirts, ladies' | Edward F. Woodward. | New York, N. Y. | June 16, 1857. | Sept. 29, 1857. |

List of reissues for 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. | Date of release. |
|-----|--|--|-------------------|---------------------------------------|------------------|
| 480 | Spoons, wire-strengthened, method of making. | William Mix, assignor to Charles Parker. | Meriden, Conn. | May 1, 1849. | Aug. 4, 1857. |
| 488 | Steamboats, capstans for. | John Schaffer. | Manchester, Pa. | Oct. 21, 1856. | Aug. 25, 1857. |
| 489 | Sugar-works. | Norbert Rillieux. | New York, N. Y. | Aug. 26, 1843; extended Aug 19, '57. | Mar. 17, 1857. |
| 442 | Teeth, mineral, setting. | John Allen. | New York, N. Y. | Dec. 23, 1851. | Mar. 24, 1857. |
| 460 | Turn-tables. | Jacob C. Robie. | Binghamton, N. Y. | Aug. 16, 1854. | May 5, 1857. |
| 441 | Vault-covers. | John B. Cornell. | New York, N. Y. | Feb. 19, 1856. | Mar. 24, 1857. |
| 510 | Watches. | George P. Reed. | Waltham, Mass. | April 14, 1857. | Nov. 24, 1857. |
| 496 | Water-pipes, coating. | Jonathan Ball. | Elmira, N. Y. | D-c. 16, 1843; extended Nov. 30, '57. | Sept. 15, 1857. |
| 516 | Weighing-machine, grain, automatic. | Rufus Porter. | Washington, D. C. | May 5, 1857. | Dec. 22, 1857. |
| 486 | Wind-wheels, automatic regulator for. | Joseph Dunkley. | Carrollton, Mo. | Jan. 13, 1857. | Aug. 25, 1857. |
| 443 | Window-curtain fixtures. | Silas S. Putnam. | Boston, Mass. | April 15, 1851. | Mar. 31, 1857. |
| 495 | Window-shades, apparatus for stencilling. | Daniel Lloyd, assignor to Gibbons L. Kelty and Dudley M. Ferguson. | New York, N. Y. | Jan. 29, 1856. | Sept. 15, 1857. |

LIST OF ADDITIONAL IMPROVEMENTS GRANTED DURING THE YEAR 1857.

| No. | Inventions or discoveries. | Patentees. | Residence. | Date of patent. | Improvements added. |
|-----|--|----------------------|---------------------|-------------------------------------|---------------------|
| 160 | Bed-bottoms, spring. | Hiram Tucker. | Cambridgep't, Mass. | July 3, 1855. | Mar. 31, 1857. |
| 177 | Boilers, locomotive. | J. Edward McConnell. | Wolverton, Eng. | June 2, 1857; England, Dec 2, 1856. | Oct. 8, 1857. |
| 180 | Chairs, portable. | Zebulon Lyford. | Lowell, Mass. | May 13, 1856. | Dec. 8, 1857. |
| 172 | Dough, kneading, machines for. | Jean Louis Rolland. | Paris, France. | Jan. 9, 1855. | July 21, 1857. |
| 173 | Engines, steam, packing pistons and stuffing boxes of. | Patrick Clark. | Rahway, N. J. | June 2, 1857. | July 28, 1857. |

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|-----|---------------------------------------|---|-----------------------|--|----------|-----------------|
| 162 | Filters | David N. B. Coffin, jr. | Newton, Mass. | Sept. | 2, 1856 | April 14, 1857. |
| 161 | Fire-arms | F. D. Newbury, assignor to R. V. De Witt, jr. | Albany, N. Y. | Aug. | 13, 1856 | Mar. 31, 1857. |
| 171 | Fire-arms | Frederick D. Newbury | Albany, N. Y. | Aug. | 12, 1856 | July 13, 1857. |
| 164 | Gale, farm | Charles N. Cole | Pleasant val'y, N. Y. | May | 13, 1856 | June 9, 1857. |
| 158 | Harvesting-machines | Robert J. Morrison | Richmond, Va. | Dec. | 16, 1856 | Jan. 20, 1857. |
| 163 | Hatches for warehouses, safety | William H. Thompson and Eustis P. Morgan. | Biddeford, Me. | June | 24, 1856 | April 14, 1857. |
| 170 | Hub-borer | John Shaver | Reading, Pa. | Jan. | 13, 1857 | July 13, 1857. |
| 166 | Hubs, wheel, cutter for boring | Leonard S. Maring | Fall river, Mass. | Oct. | 4, 1853 | June 16, 1857. |
| 179 | Ink-stands | Kington Goddard | Philadelphia, Pa. | April | 28, 1857 | Nov. 3, 1857. |
| 159 | Looms | James O. Leach | Ballston, N. Y. | Oct. 30, 1856; additional improv't July 8, 1856. | | Mar. 3, 1857. |
| 176 | Looms | Daniel W. Snell and Stephen S. Bartlett. | Woonsocket, R. I. | Jan. 13, 1857; res'd Sept. 1, 1857 | | Oct. 6, 1857. |
| 183 | Sack-holder, self-adjusting | Augustus Stoner | Mount Joy, Pa. | April | 28, 1857 | Dec. 29, 1857. |
| 168 | Sawing-machine | William P. Wood | Washington, D. C. | Feb. | 26, 1856 | June 23, 1857. |
| | | | | reissued Mar. 25, 1856 | | |
| 182 | Skates | Ferdinand Klein | Newark, N. J. | April | 1, 1856 | Dec. 22, 1857. |
| 167 | Spoke and axe-helve machine | Owen Redmond | Rochester, N. Y. | Oct. | 30, 1856 | June 23, 1857. |
| 174 | Stereotype compositions, gutta-percha | Leonardo Westbrook | New York, N. Y. | July | 19, 1853 | July 24, 1857. |
| 178 | Straw-cutters | Loren J. Wicks | Roston, Mass. | Nov. | 13, 1855 | Oct. 13, 1857. |
| 175 | Winches, hoisting, for ship-board | Joel Bryant | Brooklyn, N. Y. | April | 7, 1857 | Aug. 11, 1857. |
| 181 | Winnowers | Thomas J. Doyle | Staunton, Va. | April | 20, 1852 | Dec. 15, 1857. |
| 169 | Winnowing-machines | J. Keech and S. Stillwell | Waterloo, N. Y. | June | 13, 1854 | July 7, 1857. |

LIST OF DISCLAIMERS ENTERED DURING THE YEAR 1867.

| Inventions or discoveries. | Patentees. | Residence. | Date of disclaimer. | Date of patent. |
|-----------------------------------|---|---|---------------------|---|
| Looms, figure or fancy power..... | William Crompton, assignor to M. A. Forbush and George Crompton..... | Hartford, Conn.-- Worcester, Mass.-- | Aug. 27, 1867 | Nov. 25, 1837; extended April 9, 1851; reissued Sept. 18, 1853. |
| Reaping-machines | Cyrus H. McCormick | Chicago, Ill..... | Nov. 18, 1867 | January 31, 1846. |
| Vault-covers | George B. Jackson | Eye, N. Y..... | April 22, 1867 | April 21, 1857. |

LIST OF EXTENSIONS GRANTED DURING THE YEAR 1867.

| Inventions or discoveries. | Patentees. | Residence. | Date of extension. | Date of patent. |
|---|--|------------------------|--------------------|--|
| Bricks, burning | Joel W. Andrews | Bridgeport, Pa..... | Mar. 9, 1857 | Mar. 21, 1843. |
| Chests and safes, fire-proof..... | Daniel Fitzgerald, assignee of Benjamin G. Wilder..... | New York, N. Y..... | May 30, 1867 | June 1, 1843. |
| Coal, breaking, machine for | Joseph Battin | Philadelphia, Pa..... | Sept. 23, 1857 | Oct. 6, 1843. |
| Corn-shellers | Francis N. Smith | Kinderhook, N. Y..... | May 23, 1857 | June 1, 1843. |
| Flay-presses | Samuel Hewitt | Rochester, Wis..... | Dec. 14, 1857 | Dec. 30, 1843. |
| Knitting-machines | Henry Burt | Newark, N. J..... | Sept. 14, 1857 | Sept. 23, 1843. |
| Pavement, cast iron..... | Harriet V. Terry, administratrix of William D. Terry, deceased. | Boston, Mass | July 7, 1857 | July 12, 1843. |
| Pipes, water, coating..... | Jonathan Ball | Elmira, N. Y..... | Nov. 30, 1857 | Dec. 16, 1843; re- sued Sept. 15, 1867. |
| Spoons, polishing | Luther Boardman..... | East Haddam, Conn..... | Dec. 10, 1857 | Dec. 15, 1843. |
| Sugar-works | Norbert Billieux | New York, N. Y..... | Aug. 19, 1857 | Aug. 26, 1843; re- sued Mar. 17, 1857. |
| Washing-machines for cleaning rags..... | James Phelps..... | Sutton, Mass..... | Nov. 9, 1857 | Nov. 24, 1843; re- sued Mar. 25, 1861. |

LIST OF PATENTS FOR DESIGNS GRANTED DURING THE YEAR 1857.

| No. | Designs. | Patenters. | Residence. | Date of patent. |
|-----|---|--|---------------------|-----------------|
| 964 | Barometer-cases. | Theodore R. Timby. | Medina, N. Y. | Nov. 10, 1857. |
| 979 | Bedsteads, legs and posts of. | William Maurer, assignor to K. Krenkle. | New York, N. Y. | Mar. 31, 1857. |
| 957 | Borders, grave. | Irah Chase, jr. | Boston, Mass. | Oct. 20, 1857. |
| 947 | Bracketa, shelf, (1) | Irah Chase, jr. | Boston, Mass. | Oct. 13, 1857. |
| 948 | Bracketa, shelf, (2) | Irah Chase, jr. | Boston, Mass. | Oct. 13, 1857. |
| 958 | Bracketa, shelf, (3) | Irah Chase, jr. | Boston, Mass. | Oct. 20, 1857. |
| 936 | Brick, ornamental design for. | G. W. Sholl and Charles Stewart | Cincinnati, Ohio | Oct. 20, 1857. |
| 894 | Busts of Napoleon Bonaparte. | Thomas Ball. | Boston, Mass. | Aug. 26, 1857. |
| 888 | Churns, egg-beaters, &c. | John S. Gallahue, jr. | Washington, D. C. | June 9, 1857. |
| 935 | Clock-case fronts. | Pietro Cinquini | West Meriden, Conn. | May 19, 1857. |
| 862 | Clock-case fronts. | Charles Chinnock | New York, N. Y. | Aug. 25, 1857. |
| 883 | Clock-case fronts. | Chauncey Jerome | New Haven, Conn. | Jan. 6, 1857. |
| 882 | Clock-cases. | Elias Ingraham | Bristol, Conn. | April 14, 1857. |
| 916 | Clock-cases. | Pietro Cinquini | West Meriden, Conn. | July 14, 1857. |
| 946 | Clock-cases. | Pietro Cinquini, assignor to W. L. Bradley, W. Hubbard, and N. L. Bradley. | West Meriden, Conn. | Oct. 6, 1857. |
| 959 | Clock cases. | Samuel B. Jerome | Waterbury, Conn. | Oct. 20, 1857. |
| 950 | Clock-fronts, (A) | Nicholas Muller | New York, N. Y. | Oct. 13, 1857. |
| 951 | Clock-fronts, (B) | Nicholas Muller | New York, N. Y. | Oct. 13, 1857. |
| 970 | Clock-fronts. | Elias Ingraham | Bristol, Conn. | Dec. 22, 1857. |
| 947 | Coal-scuttles. | Gottfried Thulemeyer | New York, N. Y. | Oct. 6, 1857. |
| 890 | Furnaces. | Willis S. Bronson | Hartford, Conn. | May 26, 1857. |
| 943 | Gas-burners, shade for. | George B. Foster. | Boston, Mass. | Sept. 22, 1857. |
| 922 | Kegs, metal | C. L. Rehn and H. Everett | Philadelphia, Pa. | Oct. 13, 1857. |
| 956 | Match-boxes. | Elisha Waters. | Troy, N. Y. | Nov. 17, 1857. |
| 918 | Medallions of Franklin, to mark pens and pen-holders. | William Ball. | New York, N. Y. | July 21, 1857. |
| 876 | Oil-clothes, floor | James Hutchinson, assignor to J. E. Whipple and Stephen E. Haskell. | Lansingburg, N. Y. | Mar. 10, 1857. |
| 861 | Penril-cases, ever-pointed. | John H. Knapp | New York, N. Y. | Jan. 6, 1857. |
| 889 | Picture-frames. | A. P. C. Bonie | Cincinnati, Ohio | May 26, 1857. |
| 971 | Plough-springs, &c., trade marks on. | James D. Willoughby | Pleasant Hall, Pa. | Dec. 22, 1857. |

List of patents for designs, 1857.

| No. | Designs. | Patentees. | Residence. | Date of patent. |
|-----|--|---|--------------------|-----------------|
| 863 | Printing-types | George Bruce | New York, N. Y. | Jan. 6, 1857. |
| 880 | Railings, iron | Robert Wood | Philadelphia, Pa. | April 7, 1857. |
| 917 | Railings, iron | Henry Jenkins, assignor to the New York Wire Railing Company. | Brooklyn, N. Y. | July 21, 1857. |
| 869 | Ranges, cooking | Charles J. Shepard | Brooklyn, N. Y. | Feb. 10, 1857. |
| 945 | Shovels and tongs, stands to hold, (A) | Julius Meyer, assignor to M. Greenwood & Co. | Cincinnati, Ohio | Sept. 29, 1857. |
| 944 | Shovels and tongs, stands to hold, (B) | Julius Meyer, assignor to M. Greenwood & Co. | Cincinnati, Ohio | Sept. 29, 1857. |
| 876 | Soda-water apparatus | Joseph Bernhard, assignor to J. Bernhard, J. Hindermeyer, and L. Ganz. | Philadelphia, Pa. | Mar. 24, 1857. |
| 919 | Statues of General Warren | Henry Dexter, assignor to William Carleton. | Cambridge, Mass. | Aug. 4, 1857. |
| 865 | Stove, cooking | N. S. Vedder, assignor to Newberry, Filley, & Co. | Troy, N. Y. | Jan. 13, 1857. |
| 956 | Stove, cooking | G. Smith, H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co. | Philadelphia, Pa. | Oct. 13, 1857. |
| 972 | Stove, cooking | Jacob Steffe, James Horton, and John Currie, assignors to M. W. Jackson and W. H. Woodin. | Philadelphia, Pa. | Dec. 22, 1857. |
| 884 | Stove, cooking, plates of a | N. S. Vedder, assignor to Smith & Sheldon. | Troy, N. Y. | April 14, 1857. |
| 874 | Stove-doors | M. C. Burleigh | Great Falls, N. H. | Mar. 10, 1857. |
| 909 | Stove-fronts, grate or | John E. Bendix, assignor to S. B. Sexton & Co. | New York, N. Y. | July 7, 1857. |
| 902 | Stove-ornaments | Samuel D. Vose | Albany, N. Y. | July 7, 1857. |
| 903 | Stove-ornaments | Samuel D. Vose | Albany, N. Y. | July 7, 1857. |
| 904 | Stove-ornaments | Samuel D. Vose | Albany, N. Y. | July 7, 1857. |
| 864 | Stove, parlor | Samuel F. Pratt, assignor to Treadwell, Perry, & Norton. | Boston, Mass. | Jan. 13, 1857. |
| 941 | Stove, sad-iron | S. W. Gibbs, assignor to Winne & Abeel. | Albany, N. Y. | Sept. 8, 1857. |
| 885 | Stoves | Jacob Steffe, James Horton, and John Currie, assignors to F. H. Church. | Philadelphia, Pa. | May 5, 1857. |
| 887 | Stoves | Russel Wheeler and Stephen A. Bailey. | Utica, N. Y. | May 19, 1857. |

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|-----|--------------------------|--|-------------------|----------------|
| 891 | Stoves | G. Smith, H. Brown, and S. H. Sallor, assignors to J. G. Abbott and A. Lawrence. | Philadelphia, Pa. | May 26, 1857. |
| 895 | Stoves | S. W. Gibbs | Albany, N. Y. | June 16, 1857. |
| 901 | Stoves | Jacob Beesley and E. J. Delany, assignors to Cresson, Stuart, & Peterson. | Philadelphia, Pa. | June 23, 1857. |
| 900 | Stoves | N. S. Vedder, assignor to North, Chase, & North. | Troy, N. Y. | June 23, 1857. |
| 905 | Stoves | John C. Smith, assignor to W. Resor & Co. | Troy, N. Y. | July 7, 1857. |
| 908 | Stoves, (A) | S. W. Gibbs, assignor to Rathbone & Co. | Albany, N. Y. | July 7, 1857. |
| 906 | Stoves, (B) | S. W. Gibbs, assignor to Rathbone & Co. | Albany, N. Y. | July 7, 1857. |
| 907 | Stoves, (C) | S. W. Gibbs, assignor to Rathbone & Co. | Albany, N. Y. | July 7, 1857. |
| 912 | Stoves, (D) | S. W. Gibbs, assignor to Rathbone & Co. | Albany, N. Y. | July 14, 1857. |
| 913 | Stoves, (E) | S. W. Gibbs, assignor to Rathbone & Co. | Albany, N. Y. | July 14, 1857. |
| 911 | Stoves | N. S. Vedder, assignor to North, Chase, & North. | Troy, N. Y. | July 14, 1857. |
| 921 | Stoves | S. W. Gibbs, assignor to Young & Brother. | Albany, N. Y. | Aug. 4, 1857. |
| 920 | Stoves | J. J. Dullely and Russell Mann, assignors to George W. Eddy. | Troy, N. Y. | Aug. 4, 1857. |
| 928 | Stoves, (Centurion) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 926 | Stoves, (Farm) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 927 | Stoves, (Home) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 925 | Stoves, (Polar) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 924 | Stoves, (Superior) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 923 | Stoves, (Vesuvian) | Thomas Barry. | New York, N. Y. | Aug. 26, 1857. |
| 920 | Stoves, (Crescent) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 933 | Stoves, (Evening Star) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 929 | Stoves, (Northern Light) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 932 | Stoves, (Ocean) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 931 | Stoves, (Peruvian) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 934 | Stoves, (Snow Bird) | S. H. Ransom. | Albany, N. Y. | Aug. 26, 1857. |
| 937 | Stoves | Thomas D. Worral. | Lowell, Mass. | Aug. 26, 1857. |
| 939 | Stoves, (column) | Thomas Barry. | New York, N. Y. | Sept. 1, 1857. |
| 938 | Stoves | N. S. Vedder, assignor to North, Chase, & North. | Troy, N. Y. | Sept. 1, 1857. |
| 942 | Stoves | Garretson Smith, Henry Brown, and Samuel H. Sallor, assignors to J. G. Abbott and A. Lawrence. | Philadelphia, Pa. | Sept. 8, 1857. |

List of patents for designs, 1857.

| No. | Designs. | Patentees. | Residence. | Date of patent. |
|-----|------------------------------------|--|-----------------------|-----------------|
| 954 | Stoves..... | N. P. Richardson and William W. Stevens | Portland, Me..... | Oct. 13, 1857. |
| 955 | Stoves..... | G. Smith, H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co. | Philadelphia, Pa..... | Oct. 13, 1857. |
| 962 | Stoves..... | Garretson Smith and Henry Brown, assignors to Leibrant, McDowell, & Co. | Philadelphia, Pa..... | Oct. 20, 1857. |
| 963 | Stoves..... | William T. Coggeshall. | Fall River, Mass..... | Nov. 3, 1857. |
| 969 | Stoves..... | B. W. Dunklee..... | Boston Mass..... | Dec. 15, 1857. |
| 986 | Stoves, coal cooking, (No. 1)..... | Conrad Harris and Paul W. Zolner..... | Cincinnati, Ohio..... | June 23, 1857. |
| 870 | Stoves, cooking..... | N. S. Vedder, assignor to Wolfe & Warren. | Troy, N. Y..... | Jan. 27, 1857. |
| 873 | Stoves, cooking..... | J. E. Stevenson..... | Albany, N. Y..... | Feb. 10, 1857. |
| 878 | Stoves, cooking..... | Allen Comstock..... | Quincy, Ill..... | Mar. 10, 1857. |
| | | N. S. Vedder, assignor to John S. & Merritt Peckham. | Troy, N. Y..... | Mar. 24, 1857. |
| 886 | Stoves, cooking..... | Jacob Beesley and E. J. Delany, assignors to Cresson, Stuart & Peterson. | Philadelphia, Pa..... | May 19, 1857. |
| 892 | Stoves, cooking..... | Thomas H. Wood, Henry S. Hubbell, and John E. Roberts. | Utica, N. Y..... | June 2, 1857. |
| 899 | Stoves, cooking..... | S. W. Gibbs, assignor to North, Chase, & North. | Philadelphia, Pa..... | June 23, 1857. |
| 915 | Stoves, cooking..... | James R. Hyde..... | Troy, N. Y..... | July 14, 1857. |
| 910 | Stoves, cooking..... | J. Maguire, Joseph A. Read, and Duncan Wright, assignors to Charles Gilbert. | Philadelphia, Pa..... | July 14, 1857. |
| 922 | Stoves, cooking..... | Elias Young..... | Cincinnati, Ohio..... | Aug. 4, 1857. |
| 960 | Stoves, cooking..... | Garretson Smith and Henry Brown, assignors to Leibrant, McDowell, & Co. | Philadelphia, Pa..... | Oct. 20, 1857. |
| 893 | Stoves, cooks'..... | John D. Marabank..... | Lancaster, N. Y..... | June 2, 1857. |
| 966 | Stoves, cooks'..... | Elias Young, assignor to Chamberlain & Co. | Cincinnati, Ohio..... | Dec. 1, 1857. |
| 967 | Stoves, cooks'..... | G. Smith and H. Brown, assignors to Wolfe, Moore, & Co. | Philadelphia, Pa..... | Dec. 8, 1857. |
| 898 | Stoves, dining-room, (No. 3.)..... | Conrad Harris and Paul W. Zolner..... | Cincinnati, Ohio..... | June 23, 1857. |
| 891 | Stoves, for the plates of..... | A. C. Bartow..... | Providence, R. I..... | April 14, 1857. |

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|-----|------------------------------------|--|--------------------------|----------------|
| 968 | Stoves, laundry..... | A. C. Barlow..... | Providence, R. I..... | Dec. 16, 1857. |
| 914 | Stoves, parlor..... | E. J. Cridge..... | Troy, N. Y..... | July 14, 1857. |
| 961 | Stoves, parlor..... | Garretson Smith and Henry Brown, as- signors to Leibrant, McDowell, & Co. | Philadelphia, Pa..... | Oct. 20, 1857. |
| 867 | Stoves, parlor cook..... | N. S. Vedder, assignor to Wolfe & Warren. | Troy, N. Y..... | Jan. 27, 1857. |
| 871 | Stoves, parlor cooking..... | Daniel Wilson, assignor to Union Stove Co. | Nashua, N. H..... | Feb. 10, 1857. |
| 877 | Stoves, radiator..... | N. S. Vedder, assignor to..... | Troy, N. Y..... | Mar. 24, 1857. |
| 868 | Stoves, railroad car..... | Galbraith & Cassell..... | Jacksonville, Ill..... | Jan. 27, 1857. |
| 253 | Stoves, six-plates..... | James L. Howard..... | Hartford, Conn..... | Oct. 13, 1857. |
| 860 | Stoves, upright..... | N. P. Richardson and William W. Stevens. | Portland, Me..... | Jan. 6, 1857. |
| 872 | Stoves, wood..... | Abner J. Blanchard..... | South Reading, Mass..... | Feb. 17, 1857. |
| 897 | Stoves, wood parlor, (No. 2.)..... | A. C. Barlow..... | Providence, R. I..... | June 23, 1857. |
| 940 | Type..... | Conrad Harris and Paul W. Zolner..... | Cincinnati, Ohio..... | Sept. 8, 1857. |
| | | George Bruce..... | New York, N. Y..... | |

DESCRIPTION AND CLAIMS FOR PATENTS,

ISSUED IN THE YEAR 1857.

ILLUSTRATED WITH ENGRAVINGS.

[To find the Plates, see Index at the end of this Report.]

I.—AGRICULTURE.

No. 18,576.—JUSTUS DAY, of Murray, N. Y.—*Improvement in Machines for Pulling Beans*.—Patent dated November 10, 1857.—When the handle K is down to its lowest point on the stole A, the teeth in each section of the head are exactly over each other. In this position the rake is thrown into the beans or whatever is to be pulled; then the operator pulls upon the handle K, which causes the movable portion of the rake-head to slide, and whatever is between the teeth is bound fast.

Claim.—The movable head, arranged and operated as described, for the purposes set forth.

No. 16,926.—ALBERT KELSEY, of Westport, Mo.—*Improvement in Bee-Hives*.—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that sash-frames have been used in the working chambers of bee-hives; these I do not claim. But I *claim*, in combination with the double chambers of sash-frames K, the two walls J, with communicating passages *a* through them, when said walls or partitions are so arranged that a slide or cut-off *c* can be introduced between them for the purpose of an entire separation.

No. 18,523.—B. D. SANDERS, of Holliday's Cove, Va.—*Improvement in Bee-Hives*.—Patent dated October 27, 1857.—The nature of this invention consists in an arrangement embracing the outer casing with extended sides and vertical bottomless honey-boxes, in combination with the grooved perforated moth traps; whereby the area of the hive, by reason of the extended sides, can be increased without the necessity of piling one box on top of another at pleasure, by the simple addition of one or more transverse partitions; and whereby, also, the filth and dirt of all the boxes can, owing to their being bottomless and on the same plane, be readily removed, and also the moth which infests the inside of the hive can be entrapped and destroyed.

Claim, 1st. The combination and arrangement of the outer casing A with the extended sides *a*, and vertical bottomless honey boxes

E E with the grooved and peculiarly perforated internal moth traps F F, substantially as and for the purposes set forth.

2d. The combination and arrangement of two honey boxes, so as to produce a double chambered swarm hive, when constructed and arranged in relation to each other, and to the outer casing A, substantially as shown in figures 1, 5, and 6, and for the purposes set forth.

No. 18,757.—HENRY M. McCLELLAN, of York, Pa.—*Improvement in Bee-Hives*.—Patent dated December 1, 1857.—This improved hive is constructed in sections, hooked together in front and rear, the hook on the door of each hive entering a staple in the hive adjoining it, by means of which the hook is made to perform two functions, viz: fastening the hive door and holding the two sections together, as shown in the engravings A, B, C, fig. 2.

Claim.—The combination of the sections A, B, C, connected as shown with the rotating doors *d*, agitating and regulating wires *e*, ventilating tubes *f*, and tolling and feeding cups *g*; the said parts being constructed and arranged in relation to each other in the manner and for the purposes described.

No. 18,815.—SAMUEL KELLY, of Washington, D. C.—*Improvement in Bee-Hives*.—Patent dated December, 8, 1857.—A A represents the inner box or hive enclosed in outer box B B, both of which are open at the bottom, and rest on platform C, with the space E between the tops, so that jars, or vessels of any kind, may be placed upon box A, to receive the surplus virgin honey. The bars or frames F are always kept a certain distance apart; yet it may sometimes occur that the bees may allow the comb to project out further than usual. Then, in order to insert the zinc plates B between the frames, without injury to the combs or bees at work, the pins I are removed and the frames gently slid over, thus widening the space between the frame or frames desired to be removed, which will allow the plates B¹ to be inserted without injuring the comb or bees. When all the bees have passed out, the valve O being placed over the passage-way opposite the frames selected, they can pass out, lifting the valve up in doing so, but they cannot return.

Claim.—The sliding frames F, removable pins I, and dividing zinc plates B¹, in combination with the movable passage-ways and the sliding valve O, arranged in the manner and for the purposes set forth.

No. 16,474.—JERESIAH D. EGGLESTON, of Canaan, Connecticut.—*Improvement in Feed-boxes of Bee-Hives*.—Patent dated January 27, 1857.—The feed in the feed-box *j* is kept on a level with the bottom of said feed-box by means of a platta *l*, which is pressed against said feed-box by means of spiral springs *m*.

Claim.—The platta *l*, and wire springs *m*, in combination with the feed-box *j*, as described.

No. 18,649.—ISAAC L. SMITH, of Burlington, Vermont, and CHARLES C. COLBURN, of Massena, New York.—*Improved Butter Worker*.—Patent dated November 17, 1857.—In the engravings *a* represents the posts of the frame, and *b* the top rails thereof; *c* is the pressing roller, which is mounted on a shaft *k*, which turns in bearings located in the rails *b*. The outer end of this shaft is provided with a cog pinion *l*; *m* is the box which receives the butter to be worked. This box is hinged at one end, by means of hinges *g*, to a sliding frame *m'*, and at opposite ends there are thumb screws *h*, which pass upward through the frame *m'* against the bottom of the box *m*. By turning the said screws the end of the box is raised or lowered to accommodate the amount of butter required to be worked at one time. The lower edges of the frame *m'* form tongues, and fit into the grooved rails *f*. The latter are attached, in an angular position, to the posts *a*.

Claim.—The box *m*, hinged to a sliding frame *m'*, and made capable of adjustment to any desired extent without being thrown out of gear, substantially as and for the purpose set forth.

No. 17,564.—CHARLES W. GAGE, of Homer, N. Y.—*Improvement in Butter Workers*.—Patent dated June 16, 1857.—The butter is placed in the machine in front of the rollers *C*; the scrapers *E'*, at the back of the rollers, are then lowered, and the rollers *C* and *C'* are made to pass over the butter by operating handle *H*. As said rollers pass over the butter, cutting and pressing, it, it is scraped up by scrapers *E'* and carried to the back end of the machine; scrapers *E* are then lowered, elevating scrapers *E'*, and the motion of the rollers is reversed and the butter is worked back to the front end of the machine. This operation is repeated as often as the condition of the butter may require it.

Claim—The combination of rollers *C* *C* and *C'* within scrapers *E* and *E'*, connected and operating in the manner and for the purpose set forth and described.

No. 18,479.—WILLIAM E. WARD, of Portchester, N. Y.—*Improvement in Machines for Spading Land*.—Patent dated October 20, 1857.—In this invention the entire machine is propelled in the field in any direction required, and turned at the will of the attendant; and the same power which does this operates a series of spades which enter the land, each in succession, cut into it in the arc of a circle, and, after cutting down to the required depth, suddenly throw up the cut slice against a shield plate so as to reverse it and at the same time break it up, so that when it falls down it will be thoroughly disintegrated; the forward movement of the machine determining the thickness of the slices to be cut by the spades.

The inventor says: Having described the mode of construction which I have planned for the application of my invention, I do not wish to be understood as limiting my claim of invention to such mode of application, as other and equivalent modes of construction may be substituted.

Nor do I wish to be understood as limiting myself to the use of the several parts of my invention, as some of these may be used in connexion with substitutes for the others.

I *claim* the mode of operation of the mechanism substantially as described, for imparting the cutting action to the spades as set forth.

I also claim the mechanism for tilting the spades substantially as described, in combination with the mechanism for giving the cutting action to the said spades, substantially as described.

I also claim, in combination with the spades operated substantially as described, the shield plate, substantially as described, for aiding in disintegrating and reversing the slices as they are thrown up by the spades as set forth.

I also claim, in combination with the spades operated substantially as described, the yielding or springing part of the levers for imparting the digging or cutting action to the spades, and the yielding or springing part of the tilting levers as set forth, and for the purpose of preventing the mechanism from being broken when the spades meet with any obstruction, such as stones.

No. 18,666.—JOHN ALLISON, of Parish St. Martin, La.—*Improvement in Machines for Covering Sugar Cane*.—Patent dated November 24, 1857.—The operation of this machine is as follows: One or more horses being hitched to it, it is brought in such a position to a row of cane or seed to be covered that the row is in the centre under the machine in its longitudinal position. By drawing the machine forward the dirt will be taken and scraped up by the blades B B, accumulated and raised by lateral boards A A, and forced to the opening E, where it escapes, filling completely the furrow opened previously by a plough to receive the cane or seed. Then comes the roller D, and presses the dirt escaping through the opening E down to a convex ridge over the cane or seed. Should any dirt clog the roller, the knife or scraper H will scrape it off, and keep the roller free and clean. If the ground is rough and cloddy, the revolving harrows F F will break the lumps and prepare the ground properly to cover cane or seed.

Claim.—The inventor says: I do not claim the lateral boards A A nor the blades B B, nor do I claim the revolving harrows F F nor the roller D.

But I claim the boards A A, provided with the blades B B, and revolving harrows F F, in combination with the roller D, arranged and operating in the manner and for the purposes as set forth.

No. 18,702.—JEREMIAH H. PHILLIPS, of Colebrook, Ohio.—*Improvement in Shelving for Curing and Storing Cheese*.—Patent dated November 24, 1857.—The claim and engravings show the nature of this invention..

Claim.—The inventor says: I do not claim the construction of cheese shelves in double or single tiers.

But I claim the short moveable shelves, with the rabbeted or bevelled ends thereof combined and operating with the fixed cheese shelves, in the manner and for the purposes set forth.

No. 18,671.—LEWIS W. BEECHER, of Avon, N. Y.—*Improved Churn*.—Patent dated November 24, 1857.—Letter A is a vertical pendulum

motion frame hung at the top of the churn-box ; upon pivots in the centre of the box B B B are three bars that hold the frame together ; C, a flat lifting beater at the bottom of the dash frame ; D, a dividing rod between the valves or swing beaters ; E E, swing beaters, hung in the frame, and allowed to turn each way to an eighth of a circle—the lower one to be 3½ inches wide, the upper one 7 inches wide, with attenuated edges ; F F, two pieces united, forming the lever, the perpendicular part being attached to the frame ; G, hand-staff attached to the extreme end of the horizontal part of the lever, and by which motion is given to the frame ; H, lid in two pieces ; J J, buttons to hold the lids down, and keep the frame in its place when in motion ; K, a loop handle at the bottom of the churn-box.

Claim.—The swing valves or beaters, operating and producing the effects substantially as set forth.

No. 18,936.—WILLIAM F. TRUESDELL, of Elgin, Ill.—*Improved Churn.*—Patent dated December 22, 1857.—This invention is designed to collect the small particles of butter, which usually escape when a horizontal dasher is used. This dasher is caused to slide upon its axle, and by a gentle rotation collect the butter.

The inventor says: I do not claim the introduction of atmospheric air into the body or mass of cream while being agitated or churned, in order to expedite the formation of butter ; for this has been previously done, and in various ways.

Nor do I claim, broadly, the idea of adjusting the dashers in churns.

But I *claim* the employment of the peculiarly formed dashers D, having air-tubes *j* attached, said dashers being so made as to churn and introduce the air when turned in one direction, and presenting chambers for the collection of the butter, when the direction is reversed.

No. 18,937.—JAMES VANDOLAH and ELIAS CURRY, of Dillsborough, Indiana.—*Improved Churn.*—Patent dated December 22, 1857.—In this invention a cylindrical vessel or tub A is provided, on the removable cover of which are mounted a winch B, and bevel wheel C, gearing into a bevel pinion D, whereby motion is communicated to a short vertical shaft E. The lower end of said shaft is suitably coupled to the upper end of the dasher shaft G. There is employed for the dasher shaft a tube, through which hot or cold water may be poured into the hollow dasher. In the upper end of this shaft opens a mouth A to receive the water to be conveyed to the dasher H. Said dasher is secured to the bottom of the tubular shaft G, and from the centre of its under shaft projects a small pivot or journal to turn in a step in the bottom of the churn.

The inventors say: We *claim* the construction of the dasher, with the rim *c*, wings *d d*, peripheral strips *f f*, and horizontal plates *g g*, arranged and operating substantially in the manner and for the purposes specified.

We also claim the arrangement of the ribs I I, with retaining hoops *k k*, or their equivalents, so as to render them adjustable and removable, substantially as and for the purposes specified.

No. 18,382.—ISAAC N. BUCK, of Elgin, Illinois.—*Improvement in Churn-Dashers*.—Patent dated October 13, 1857.—In the drawing C is the wheel, or sectional scroll, made of wood. E are the diamond-shaped breakers fastened on the upper side of wheel C. At the commencement of each section of the wheel A are the arms. B is the place for the shaft which puts the dasher in motion.

Claim.—The inventor says: I claim the diamond-shaped breakers E, in combination with the wheel C, when formed and arranged in the manner and for the purpose as substantially set forth.

No. 16,717.—E. P. COWLES AND J. A. COWLES, of Oakfield, New York.—*Improvement in Churns*.—Patent dated March 3, 1857.—The inventors say: We distinctly disclaim the invention of two dashers, moving in contrary directions and operated by geared wheels and an intermediate pinion. Examples of such an arrangement are seen in Brown and Bigelow's patent, 1852, and in Mansfield and Moore's rejected application, 1853; but in neither of these examples, nor in any other churn with which we are acquainted, is our feature seen of having the arms of the dashers so curved as to draw the cream from the centre of the churn and force it against the sides of the machine for the purposes set forth.

We disclaim the use of curved arms, except when thus employed and operating.

Having the connecting pinion F adjustable, in the manner and for the purposes described, is also a new and highly valuable feature in this description of churn. Without this adjustability, it would be almost impossible to collect the butter.

The employment of springs *g* and *i* saves the necessity of stuffing boxes to prevent leakage. These features are also new in churns, to the best of our knowledge and belief.

We disclaim every part and feature of our device which is seen in any other churn or analogous machine; but we *claim* and desire to secure by letters patent the shafts B, C, with collars *f h*, and wheels D and H, thereon, in combination with springs *i* and *g*, arranged and operating in the manner and for the purposes set forth.

No. 17,159.—H. N. MACKAY, of Morgantown, Virginia.—*Improvement in Churns*.—Patent dated April 28, 1857.—The inclined shafts *c* and *c'* run across the body B of the churn, each shaft being provided with wings W W'. These shafts rotate in opposite directions by the gearing connexion *g g'*. The wings are perforated, and through said perforations pass a system of double headed pistons *a*, fitting loosely and having a reciprocating movement by the action of gravity as the shafts rotate.

Claim.—The combination of the oblique wings with the double-headed self-acting pistons passing through them, operating as and for the purposes set forth.

No. 17,444.—HENRY C. NICHOLSON, of Mount Washington, Ohio.—*Improvement in Churns*.—Patent dated June 2, 1857.—The nature of this

invention will be understood by reference to the claim and engravings.

The inventor says: I am aware flutter wheels have been used in churns, but in such manner as to prevent the free agitation of the cream, viz: by causing them to rotate against a division board, or by passing a hoop around their peripheries, either of which does not effect the object I have in view. I do not claim either of these plans.

But I *claim* the so arranging of the flutter wheels W upon bent arms A as that the cream agitated by them shall not react against any dividing surface, or be impeded by any surrounding piece, and thus I allow the agitation to be more direct in a vertical line, and not follow the rotation of the shaft S on which they are placed, as set forth and represented.

No. 17,781.—CHARLES H. DANA, of West Lebanon, New Hampshire.—*Improvement in Churns*.—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim as new an oscillating churn; neither do I claim the causing of the dasher to make more than one up and down stroke at each oscillation of the cream vessel, independent of the specific means employed.

But I *claim* the irregular curved pieces C, forming the undulating slot D in combination with the slotted oscillating frame E, and cross-bar K, with friction rollers J, for giving three up and down strokes to the dasher at each oscillation of the cream vessel, as set forth.

No. 17,790.—SILAS HEWIT, of Seneca Falls, New York.—*Improvement in Churns*.—Patent dated July 14, 1857.—As the shaft C is rotated the flanges B force the cream continually upwards, and it is then allowed to fall around the shaft downward to the bottom of the tub, where it is again operated upon by floats A and flanges B.

Claim.—The floats A, in combination with the flanges B, constructed and arranged in the manner and for the purposes set forth.

No. 18,165.—DANIEL E. TRUE, of Lake Village, New Hampshire.—*Improvement in Churns*.—Patent dated September 8, 1857.—The cream being put into the receptacle A, a rocking motion is given to said receptacle, which causes the cream to flow rapidly in two separate currents around the separator E, said currents coming in contact at their terminus alternately, whereby the cream receives a violent and peculiar action which causes a speedy union of the particles of butter into one mass.

The inventor says: I am well aware that dashers made in the form of grates, or perforated with holes, are not new, and may be found in the specification of Enoch Thomas's and John McLaughlin's patents; therefore I do not claim their application or use.

I *claim* the employment (in the rocking and other churns of similar operation) of a separator, when the same is constructed, arranged and applied, substantially in the manner and for the purpose herein described and set forth.

No. 18,384.—MOSES BYARD, of Milan, Illinois.—*Improvement in Churns*.—Patent dated October 13, 1857.—Upon the driving shaft A, in this improved machine, is a hollow cylindrical vessel or “gatherer” B, secured in any convenient manner concentrically around said shaft, with which it revolves. At one side of the gatherer there is a spiral opening or mouth *a*, formed substantially as represented in the drawing, by which means a passage is left to the interior of said vessel. At suitable distances apart, in the surface of the gatherer, are long narrow openings *b b*, arranged in the direction of its periphery, as shown in the drawings. This peculiar shape in the openings is necessary in order to keep them from being filled or clogged with butter as the gatherer is revolved. In one end of the gatherer may be a removable head *f*, which slides over the shaft A, and fits closely in the open end of said gatherer. Its use is to give support to the end of the cylindrical vessel.

The inventor *claims* the cylindrical vessel B, or its equivalent, with a special opening or mouth in one side, and small oblong openings in its periphery, arranged and operating substantially in the manner and for the purpose specified.

No. 17,797.—HOWARD MANN, of San Francisco, California.—*Improvement in Cultivators*.—Patent dated July 14, 1857.—By turning the crank C, the operator can contract or expand the cultivator plough B, to suit the width of the rows, without stopping the movement of the implement.

Claim.—The arrangement of shanks *g g* with rack bars *f f* and segmental plates *h h*, in the manner and for the purpose set forth.

No. 17,439.—ROBERT McCUTCHEEN, of Towanda, Pa.—*Improvement in Atmospheric Churns*.—Patent dated June 2, 1857.—The body A being filled with milk or cream, the reservoir D is filled with water of the proper temperature at which milk or cream is easiest and best converted into butter. By working lever A the bellows F and F' are operated, forcing the current of air through the reservoir C to assume the temperature of the water in the reservoir D, and thence through air pipe M, which distributes it through the milk or cream, and produces the butter by separating the oily from the serous part of the milk.

The inventor says: I do not claim using atmospheric air in a churn to produce butter, by the mechanical disturbance of the cohesion of the oily and serous part of milk or cream by agitation, as that is known and used.

But I claim the bellows F F', the chambers C and D, and the air pipe M, when arranged in relation to each other and to the body of the churn in the manner and for the purposes set forth.

No. 18,505.—A. J. FRENCH and J. A. FRENCH, of Franklin, Vermont.—*Improvement in Machines for Severing Ears of Corn from the Stalks*.—Patent dated October 27, 1857.—In operating this machine power is applied to the cylinder D, and motion is communicated to the endless apron B and roller C by means of the belts *e* and *i*. The

apron, rollers, and cylinders rotate in the direction indicated by the arrows. The stalks, with the ears of corn attached, are placed on the apron butts foremost, and pass underneath the roller C. This roller has a tendency to turn the ears of corn downwards as the ears pass underneath it, and the stalks pass between the cylinders D E, and are cut by the knives *d* into small pieces for fodder; but the ears cannot pass through or between the rollers, and are cut from the stalks by the knives *d*, the knives severing the butts or nubbins at the bases of the ears, which fall down, as shown in the engraving.

The inventors say: We are aware that endless aprons are commonly used as feeding devices, and also that two cylinders D E (one being provided with knives) are in common use for cutting stalks, &c.; but we are not aware that the apron and cylinders have been combined so as to operate conjointly, as shown, for the purpose specified.

We *claim* the endless apron B, and pressure roller C, in combination with the cylinders D E, the cylinder D being provided with knives *d*, and the cylinder E having a smooth periphery, the parts being arranged as described, for the purposes set forth.

No. 17,466.—ISAAC N. WHITAKER, of Pecatonica, Ill.—*Improved Hand Implement for Severing the Butts and Separating Husks from ears of Corn*.—Patent dated June 2, 1857.—In using this implement the plate *b* is secured to the waist of the operator by means of a strap. The operator grasps the tip of the ear of corn with one hand, and opens the levers A A by grasping the handle *c*, and the two cutters C are placed at opposite sides of the butt of the ear. The operator then closes the levers, and the cutters C pierce the butt and detach the ear from it, the husks being also detached from the stem; and as the levers close, the concave and oblique sides of the lips *e* press up the ear of corn, and present it to the hand of the operator free from husks.

Claim.—The cutters C C and flanches or lips *e e* attached to the levers A A, and constructed and arranged substantially as shown and described, for the purpose set forth.

No. 18,326.—WILLIAM T. CLEMENT, of Shelburne Falls, Mass.—*Improvement in mode of attaching Scythes to Snaths*.—Patent dated October 6, 1857.—This invention consists in securing the "tong" or "shank" of the scythe to an adjustable plate by means of a loop and screw, the plate being pivoted to the butt of the snath, and the several parts so arranged that the scythe may be not only firmly secured to the snath, but also adjusted or set at varying angles with it, as circumstances may require. In this improvement no nuts are required to be removed or unscrewed in order to adjust the scythes. The slot K, in the plate D, allows of the ready insertion of the tong E through the loop C, the claw *l* passing into said slot as the tong is passed within the loop.

The inventor, in stating his claim, says: I *claim* the combination of the adjustable plate D, loop C, and screw C, when arranged substantially as described for the purpose specified.

No. 18,361.—**ANCIL STICKNEY**, of Concord, N. H.—*Improved Corn-Sheller*.—Patent dated October 6, 1857.—In operating this improved machine an ear of corn, tip first, is inserted in the mouth of the machine; as the wheel is turned the ear is carried down, with a rolling motion, by the side of flanch *b*, until the head of the ear gets below the centre of the wheel, when it rolls across the flanch, the tip in the meantime projecting from the bottom of the machine, and then is carried up by the side of flanches *b b*, and escapes from the machine at the top. This improvement is applicable only to the particular kind of corn-sheller patented by J. D. Briggs, in 1845.

The inventor *claims* the combination of the rocking piece C with the flanged piece B and wheel A, the whole being arranged substantially as described, and for the purpose specified.

No. 18,139.—**ANDREW DILLMAN**, of Plainfield, Illinois.—*Improvement in Corn-Shellers*.—Patent dated September 8, 1857.—The corn cobs pass down through hopper H, and against the shelling desk H, the empty cobs and corn dropping down on apron M, where they are carried upwards by means of lags *f g*, while the corn drops down through the machine, as represented in the engraving.

Claim.—In combination with an inclined trunk, such as described, the inclined carrying apron or belt M, with its lags *f g*, arranged in the manner and for the purpose set forth.

No. 18,296.—**J. J. PARKER**, of Marietta, Ohio.—*Improvement in Corn-Shellers*.—Patent dated September 29, 1857.—This improvement is described in the drawings and claim of the inventor. The inventor says: I am aware that a sheller consisting of a face wheel working against a vertical burr wheel, patented to Peck, has been suggested as a corn-sheller; but its efficiency for shelling corn is questionable, neither is there any provision for clearing the corn by fan or otherwise.

Neither do I claim the mere combination of a sheller and fan irrespective of the arrangement I have discovered.

But I *claim* the necked shelling wheel D, when arranged and operating in connexion with the shelling wheel F and elastic side C of spout H and spring *d* in the manner and for the purposes set forth.

No. 18,700.—**JOHN W. MORTON**, of Brunswick, Ohio.—*Improvement in Corn-Shellers*.—Patent dated November 24, 1857.—In operating this machine the ears of corn are passed into the opening R, between the jaws; these jaws being adjustable, any sized ear of corn will be shelled in passing through. The inner edge S of these jaws are spreading so as to form the section of a screw; by these the cob is drawn into the spur rollers *o o*, which discharge the cob from the machine, while the corn passes down through the spout T as it is separated from the cob by the teeth U on the jaws. By the action of the springs G, the jaws are always in place for shelling the various sized ears.

Claim.—The driving of both the exit rollers *o o* in opposite directions by means of the endless screw L, or its equivalent, operating

upon the gear M, the opposite end of one roller shaft N being made adjustable by the step P and spring *a* for the purpose of seizing the cob, whether large or small, and delivering it from the machine as specified.

No. 18,342.—SANFORD KINGSBERRY, of Carrolton, Georgia.—*Improved Machine for Shucking and Shelling Corn*.—Patent dated October 6, 1857.—Upon a suitable driving shaft D, which must be placed in a horizontal position, or nearly so, a strong wheel A is secured. The wheel should be forty-two inches in diameter, or thereabouts. One or both sides of said wheel is armed with peculiarly arranged lateral teeth, viz: At the distance of some eight or ten inches from the centre of the face of said wheel commences the innermost of the two, three, or four annular rows *g g* of teeth, which gradually increase in length from the innermost to the outermost of said rows; and outside of said annular rows of teeth the face of the wheel is armed with alternating fan-shaped series of teeth *f f*, which gradually increase in length as they pass outwards to the periphery of the wheel.

At the side of the face of the wheel A, and as near to its shaft as practicable, is secured to the frame of the machine the vertical tapering concave B, whose shape is represented by fig. 3 in the drawings; the inner surface of said concave being of such a shape that all parts thereof will be equidistant from the extremities of the respective series of teeth which project from the face of wheel A.

Claim.—The inventor says: I *claim* the combination of the toothed face or faces of the wheel A with the tapering concave or concaves B, when the respective series of actuating teeth on the face or faces of the wheel A are proportioned and distributed substantially as set forth, and for the purposes specified.

No. 18,905.—WILLIAM G. HUYETT, of Williamsburg, Pa.—*Improvement in Machine for Cutting and Grinding Cornstalks*.—Patent dated December 22, 1857.—This invention consists in combining a conical grinding shell F with a vertical grinding disk G and vertical cutting-knives E, in such a manner that the bottom part of the shell shall form an inclined plane, down which the cut stalks shall roll, and prevent the grinding disk from being choked up, and also prevent the cutting-knives from being choked; the stalks which roll down the shell being also ground during their downward passage.

Claim.—Combining an inclined grinding concave G with a cutting wheel D and disk *e* in the manner and for the purposes as described.

No. 18,076.—JOHN AUGSPURGER, of Trenton, O.—*Improvement in Machines for Cutting Corn Stubble, &c., on ground preparatory to ploughing*.—Patent dated September 1, 1857.—As the machine is drawn over the field, the corn stalks lying on the same are gathered by the teeth *a*, while the shears *g* cut them shearwise with the teeth of the rake, the sweeps *h* removing any cornstalk which might otherwise clog the teeth.

Claim.—The described (or substantially equivalent) combination with the teeth of a rake of rotating knives, for the purpose set forth.

No. 16,401.—JOSEPH SHAW, of Richland, Ga.—*Improvement in Cotton-Cultivators*.—Patented January 13, 1857.—The vertical adjustment of the hoes E is effected by operating the set-screws *a* and *b*, the lateral adjustment by turning the heads *c*, and the position of the shoes H can be adjusted by means of set-screw *f*, which can be inserted into any one of the holes *g*, arranged in a circle around the centre of shafts D.

Claim.—In combination with the hoes E E, having both a vertical and lateral adjustment, the shoes H H above them, and so adjustable on or with said hoes as to serve to throw the earth towards or from the plants, as may be required, the whole being for the purposes set forth.

No. 17,091.—JOHN M. HALL, of Warrenton, Ga.—*Improved Cotton-Cultivator*.—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination with the wheel P of the adjustable hoes *i*, constructed, arranged, and operating in the manner and for the purposes set forth.

No. 16,364.—JAMES P. CRAMER, assignor to HIRAM CRAMER, of Schuylerville, N. Y.—*Improvement in Cultivator Teeth*.—Patented January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—As a new manufacture my improved cultivator teeth, composed of a properly shaped sheet-metal blade and shank B, with an iron head A cast upon the shank, and embracing its outer and inner surfaces in such manner that the said blade, shank, and head of the tooth will form but a single piece, substantially as set forth.

No. 17,925.—F. R. FORSYTHE, of Cape Vincent, N. Y.—*Improvement in Cultivator Teeth*.—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The new manufacture of cultivator teeth, consisting of a sheet steel blade, bent to the required form, with a cast iron boss *b* cast thereon, substantially as specified.

No. 18,471.—CHARLES H. SAYRE, of Utica, New York.—*Improvement in Cultivator Teeth*.—Patent dated October 20, 1857.—This improvement relates more particularly to that class of cultivator teeth made of sheet metal. To provide a tooth that will not be subject to the objections heretofore made to sheet metal teeth is the object of this improvement, which consists in a peculiar mode of constructing and securing the block head A to the shank B of the tooth, by which superior strength and durability are attained.

A tooth constructed on this plan is made in two principal parts, the first of which consists of the head piece A, and the second of the body of the tooth B; the latter of which is cut out of sheet metal of the proper size and thickness and then swaged into a tooth, as represented in the engravings, the tooth being provided with a couple of ears *a*.

The inventor says: I *claim* the method described of securing culti-

vator teeth formed of sheet metal to the frame, by means of a head or cap piece, constructed in the manner substantially as described.

No. 17,821.—HENRY SCHREINER, JR., of Berrysburg, Pennsylvania, assignor to himself and GEORGE LARK, of Berrysburg, aforesaid, and by them reassigned to said Schreiner.—*Improvement in Cultivators*.—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that ploughs similar to mine have been patented and also harrows; I therefore disclaim the plough separately, and the harrows separately.

But *claim* in connexion with the cultivator E E, F F, the arrangement of the cross beams A A¹ C, and the transverse beam D, in the manner and for the purpose set forth.

No. 17,797.—HOWARD MANN, of San Francisco, California.—*Improvement in Cultivators*.—Patent dated July 14, 1857.—By turning the crank C, the operator can contract or expand the cultivator plough B to situ the width of the rows without stopping the movement of the implement.

Claim.—The arrangement of shanks *g g* with rack bars *f f* and segmental plates *h h* in the manner and for the purposes set forth.

No. 17,909.—HARRISON OGBORN, of Greensfork, Indiana, and GEORGE TAYLOR, of Richmond, Indiana, assignors to HARRISON OGBORN, aforesaid.—*Improvement in Cultivators*.—Patent dated July 28, 1857.—By operating treadle I, the plough beams *g* are raised for the purpose of turning the cultivator or passing over obstructions.

The inventors say: We do not claim the combination of a crank axle-tree extending across the centre of the frame, on the ends or cranks whereof are mounted the sustaining wheels, the same being for the purpose of raising and lowering the frame of the cultivator as shown and described in D. B. Rogers's patent of January, 1849.

But we *claim* the combination of the plough beams *g g g g* with the eccentric axles F, in the manner and for the purposes set forth.

No. 18,073.—CHARLES H. SAYRE, of Utica, New York, assignor to himself and SAMUEL REMINGTON, of Ilion, New York.—*Improvement in Cultivators*.—Patent dated August 25, 1857.—The positions of the plows can be adjusted by loosening the nuts *e e¹ e² e³*, and sliding the shanks of the plough shares within the grooves *c c¹ c² c³*, and by then securing them to the desired places, the pitch of the mould-boards C¹ to suit the width of the rows being given by adjusting the slotted arms *f*.

Claim.—A combined horse hoe and double mould-board plough, constructed, arranged, and operated substantially as set forth.

No. 18,330.—WILLIAM J. FORSHEE, of Indianapolis, Indiana.—*Improvement in Cultivators*.—Patent dated October 6, 1857.—In the drawings A is the beam which is attached to the bar B, to which is firmly attached the wheel C. D and E are clamps designed to hold the wheel C in any required position. The teeth F are attached to

shanks, to which are attached the levers G. The levers G are attached to the bar H at an equal distance from the centre with the attachments of the shanks (upon which are the teeth) to the bar B from its centre, the levers being of equal length.

The inventor *claims* the combination and arrangement of the bar B, the wheel C, the bar H, and levers G G and G, when constructed and operated substantially as set forth.

No. 18,520.—THOMAS A. ROBERTSON, of Friendship, Maryland.—*Improvement in Cultivators*.—Patent dated October 27, 1857.—The wing B of this implement is of the peculiar form shown in the engravings, viz: having a straight edge C, to which a cutter may be attached if necessary. The side D extends upwards and gradually curves to the rear portion E. The box side portion F is straight, and on a level with the cutter A. The edge C is inclined upwards from the straight side F, so that while the cutting edge enters the ground, the point H just skims below the surface without disturbing the roots of the plants, while the weeds are carried back over the wing and deposited in the rear of the cutter, in the middle of the row and clear of the plants.

The inventor says: I am aware that a weeding implement was patented November 18, 1851, to Henry Goldson, in which a scraper or mould-board was attached to the standard of a plough in such a way as to turn the weeds over the land side of the plough; and, therefore, I lay no claim to such an invention.

But I *claim* the curve scraper in combination with the plough point and standard, in such manner that the weeds and sods shall be delivered in the rear of the standard, as set forth.

No. 18,530.—NICHOLAS WHITEHALL, of Rob Roy, Indiana, assignor to Himself and A. L. WHITEHALL, of Rob Roy, Indiana.—*Improvement in Cultivators*.—Patent dated October 27, 1857.—The object desired to be accomplished in the construction of this improved cultivator is to fit it for ploughing both sides of a row of corn or other vegetable at the same time, even after having grown to considerable height, using two horses to do the work; the frame work, evener, &c., being arched from side to side to pass over the corn.

The inventor says: I *claim* providing a double cultivator, the middle of which is elevated to pass over the corn, with a compound evener suspended upon three points, and arranged as described for the purpose set forth.

No. 18,587.—DAVID E. HALL, of Abingdon, Illinois.—*Improvement in Cultivators*.—Patent dated November 10, 1857.—This invention, by giving a lateral and vertical motion to the shares under the control of the person guiding the cultivator, enables the operator to follow the sinuosities of the furrows; it also has cutters attached for cutting up stalks or weeds that may be in the way.

Claim.—The inventor says: I am aware that cultivators have been previously devised, in which shares have been so arranged as to allow a certain degree of lateral movement; but I am not aware that shares

have been arranged and applied, as shown, to admit of the two movements described, and rendered capable of being adjusted with such facility.

I therefore do not claim, broadly and separately, the adjustable shares, irrespective of the arrangement shown and described.

But I *claim* the attachment of the shares P P to the bars I I, which have their back ends pivoted in the pendants H H and their front ends fitted in the pendant slotted bars J J, which are attached to the sliding bar K, the bar K being operated by the treadles M to give the lateral movement to the shares, and the bars I used vertically by the treadles N to give them their vertical movement, as described.

I further claim the cutters Q pivoted to the bars *o*¹ and over the plates R, and connected to the rods l, the whole being arranged as shown for the purposes specified.

No. 18,714.—JOSEPH SUMMERS, of Raleigh, Virginia.—*Improvement in Cultivators*.—Patent dated November 24, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The use of the hinged wings D D, which are adjusted by rack and pinion, when arranged to move in and out over a stationary curved supporting and guide rod E, which has two springs F F coiled round it, in combination with a stationary circular notched plate J, pivoted tilting lever K, and spring L, which are arranged, as shown, as and for the purposes set forth.

No. 18,785.—A. QUARLES WITHERS, of Red Banks, Miss.—*Improvement in Cultivators*.—Patent dated December 1, 1857.—The scrapers H H, whereby the surface of the earth is cultivated, are respectively secured to the front edges of the stock bars G G, one of which is situated at each side of and near the central longitudinal line of the implement. The said stock bars are hinged at *d d* to the under side of the forward frame B, so that they may have a vibrating play sidewise, and thereby allow the scrapers to yield transversely and adapt themselves to the surface of the ground, each independent of the other.

Claim.—Hanging the stock bars G G to the frame by hinge joints, so as to give them a vibratory play sidewise, substantially in the manner and for the purpose specified.

No. 18,739.—JOSHUA GIBBS, of Newark, Ohio.—*Improvement in Cultivators*.—Patent dated December 1, 1857.—The claim and engravings show the nature of this invention.

Claim.—The inventor says: I am aware that adjustable and reversible shares have been heretofore used. I do not claim, broadly, to be the inventor of them.

I respectfully disclaim whatever may be in my device which resembles any portion of J. L. Eastman's patent, June 30, 1836, R. H. Springstead's patent, February 12, 1845, and A. Leland's patent, January 2, 1849.

But I *claim* a cultivator constructed as described, viz: having its frame A made of wrought iron in the form shown, with metallic plates J, made to slide longitudinally on the frame, the share

C of the form shown attached to the plates *j* by bolts *m*, and capable of being adjusted and reversed, all as specified.

No. 18,840.—DAVID P. DAGGERT, of Palmyra, N. Y.—*Improvement in Cultivators*.—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The peculiar construction and arrangement of parts whereby the frame of the cultivator may be elevated or depressed in relation to the surface of the soil, either parallel to the plane of the surface or inclined thereto forward or backward at any desired angle by means of the lever beam D, swivel wheel I, swivel clevis H, and adjustable wheels C, combined, arranged, and operating in the manner and for the purposes specified.

No. 18,900.—A. W. HAWLEY, of Milan, Ohio.—*Improvement in Cultivators*.—Patent dated December 22, 1857.—A is the body of the frame; B is the brace attached to side of frame; to the brace is framed the arm D, to which arm is secured the peculiarly formed share E. In the centre of the rear end of the frame is the arm F. The shovel plough H is secured to the lower end of the arm F. To the side of the arm or brace is connected the adjustable arm J, to which is attached the fender K, by a pin joint at L. The arm J moves and may be set at any proper position by the screw M, by which it is connected to the brace.

Claim.—The movable fender K, adjustable arm J, and movable brace B, with the peculiar shaped share E, when arranged as set forth, and for the purpose of protecting the plants from injury, as specified, and for changing the share and fender to the right or left of the frame, in the manner and for the purpose substantially as specified.

No. 18,928.—JOHN RIGHTER, of Clarksburgh, Va.—*Improvement in Cultivators*.—Patent dated December 22, 1857.—The frame A is provided with teeth and shares so arranged and supported by draught rods F as to make them strong. The teeth A admit of lateral adjustment in suitable slots D, and, by a device of cog wheels and screws working in unison with each other, further admit of the change of position requisite in giving the teeth point or inclination to properly enter the soil. The device further serves the purpose of clamping and retaining the teeth in the slots of the frame.

Claim.—The employment of the pinions *e* and *f*, when in combination with the screw shaft *h* and teeth or ploughs *a a*, substantially in the manner and for the purposes set forth.

No. 18,939.—LORIN WETHERELL, of Worcester, Mass.—*Improvement in Cultivators*.—Patent dated December 22, 1857.—The object of this invention is to make the same machine susceptible of the cultivation of young and tender plants that require but little soil to be at first thrown up against them, and to increase its capacity as the plants continue to grow by increasing the width of its wings, hoes, or scrapers *f n*, and bring them into such position vertically as will cause them to dip into or penetrate the soil to the proper depth.

Claim.—In combination with a plough, H, the pair of revolving hoes or scrapers, having a vertical adjustment in addition to the adjustment of the edges thereof, so that the capacity of the machine may be increased with the increasing height of the plants to be cultivated by it, substantially as set forth.

No. 16,906.—JOHN B. BAKER, of Onondaga, N. Y.—*Improvement in Corn Cultivators.*—Patent dated March 31, 1857.—The beams B can be adjusted upon the bars E and G, and secured in their positions by bolts *a* and *b*. The bar E is provided with an arc E, which serves the double purpose of brace to said bar, and of fender to push the stalks aside without breaking them.

Claim.—I am aware that cultivators have been made with adjusting bars before and behind, whereby the teeth may be adjusted in a manner similar to mine; and I do not, therefore, wish to be understood as making any claim to the adjustment.

But I claim the arc or fender E', in combination with the adjusting bar E, whereby the stalks are laid aside, and the said bar rendered much more durable—the whole constructed as set forth.

No. 17,391.—ALEXANDER A. ROBERTS and BALDWIN DAVIS, of La Grange, Ga.—*Improvements in Cotton Cultivators.*—Patent dated May 26, 1857.—The frame A, to which the front hoes *a* are attached, can be operated by brake *e*; while the frame B, to which the rear hoes and the harrow *c* are attached, swings on shaft *z*, and can be raised or lowered by means of handles *d*.

Claim.—In combination with the frame A A A A and brake *e*, as described, the movable frame B B B B, armed with hoes *a* and a harrow *c c*, the teeth of said harrow being so arranged as to cultivate between the bunches of cotton, and at the same time clear the standing cotton-plants from clods, &c., in the manner set forth.

No. 18,442.—DANIEL P. FORNEY, of Jacksonville, Ala.—*Improvement in Cotton Cultivators.*—Patent dated October 20, 1857.—To each of the cranks E and F is attached a hoe G. The first crank E, on shaft of the pinion D, is sixteen inches from the pinion, or any distance so as merely to strike clear of the wheel A. The second crank, F, is twenty-one inches from the first crank, that is, from centre to centre of the cranks.

To give an up and down stroke to the hoe, the lower of the two rollers, I, is placed in a line with the crank shaft and the point on the ground where the hoes strike. Thus, as the cranks ascend the hoe descends, and as the hoe ascends the cranks descend, giving an up and down motion to the hoe. As the cranks begin to descend below the line, the hoe will ascend, clear itself of earth, and be raised above the row of cotton, ready to make another lick, and so on to the end of the row.

The inventor says: I *claim* the application of the rollers I and brake K, in combination with the hoes G and cranks E and F, substantially in the manner and for the purpose described.

No. 18,478.—RANSOM A. VICK, of Byhalia, Miss.—*Improvement in Cotton Cultivators*.—Patent dated October 20, 1857.—This improvement can be understood by referring to the engraving and claim.

The inventor says: I *claim* the construction and arrangement of the body E, top-piece D, and front bar G, so as to be firmly and conveniently combined, and so that three bolts will unite them together, and at the same time secure the handles, beam, and blade thereto, substantially in the manner specified.

No. 17,849.—THOMAS E. SHANNON, of Woodville, Mississippi.—*Improvement in Cotton and Cane Cultivators*.—Patent dated July 21, 1857.—This invention consists in combining a series of revolving cutters *a'* with an adjustable framework, and in combination therewith an elevated central revolving cutter *a'*, to pass over the drill and to thin out the plants.

Claim.—The combination with a wheel carriage of a series or gang of revolving cultivators, arranged and operated in the manner and for the purpose set forth.

No. 18,317.—HENRY BEITZELL, of Centreville, Indiana.—*Improvement in Grain Drills*.—Patent dated October 6, 1857.—A (fig. 1) is a hollow cast iron tooth, of the shape and dimensions usual in grain drills, with the addition of two shoulders, or jaws, of the form and structure represented by letter C in the drawing, which said jaws project in front of the tooth, and contain holes to receive the bolts *r r* and W W, and which said jaws are cast to and along with the tooth A. D is a wrought iron drag bar, which is secured between the jaws of the tooth by the iron bolt *r*, and also by a wooden pin at W, both of which pass through the jaws and the bar. B, in fig. 2, is an adjustable cutter, which is attached to and between the jaws of the tooth A C by means of an iron bolt in fig. 1.

The inventor says: I *claim* the combination of the adjustable cutter B with the drill tooth A C and the draft bar D, in the manner and form as described and represented.

No. 18,590.—JOSEPH INGELS, of Fayette county, Indiana.—*Improvement in Grain Drills*.—Patent dated November 10, 1857.—On the axle B of the machine which turns with the wheels is placed a cam or zig-zag wheel L, which, as it revolves, vibrates a lever *g*, which is pivoted at its centre *i* to the frame of the machine, there being a friction roller *n* on lever *g*, against which the wings or cams *o*, on wheel L strike, to cause the vibratory motion of said lever. Both ends of lever *g*, where they extend beyond the sides of the hopper, are provided with a series of holes, 1, 2, 3, 4, into one of which the hook, or one end of a connecting rod *m*, is placed, the other end of said rod being connected to a bar M, which gives to it a reciprocating motion, longitudinally of the hopper. To the bar M are connected the ends of crank rods *r r r*, which have their other ends attached to the other blocks P P P, which are pivoted one in each of the seed cells G. The motion communicated to the bar M is thus transmitted

to the blocks or feeders P. These feeders have cups or recesses S formed in their under sides.

The inventor says: I am aware that a seed slide has been operated from a zig-zag wheel, and caused to draw or force the grain to the exit; this I do not claim.

But I *claim*, in combination with the cells G, the feeding blocks P, vibrating in said cells, and provided with recesses S for catching and forcing the grain to the exit openings, as described.

No. 16,540.—OLIVER C. GREEN, of Worcester, Illinois.—*Improvement in Seed Drills*.—Patent dated February 3, 1857.—As the disk F vibrates, its arm *f* vibrates; and as the arm is in close proximity to the hole *g*, which communicates with the hopper E, it will constantly keep the hole clear and carry the seed over the ends of the concave *h* into the tube G.

Claim.—The arrangement of the oscillating armed disks F, concave *h*, and guide ways *i*, in combination with the aperture *g* of the hopper, in the manner substantially as set forth.

No. 17,144.—EZRA EMMERT, of Franklin Grove, Illinois.—*Improvement in Seed Drills*.—Patent dated April 28, 1857.—As the machine moves forward, the axle B and circular cutters E revolve, and the soil is drilled for the reception of seed by the cutters, which are caused to enter the soil by the weight of the frame, cutting and demolishing all grass and stubble which may come before the drill teeth *d*, and thus preventing said teeth from being thrown above the surface of the soil, out of operative condition.

The inventor says: I do not claim broadly the use of edge wheels in seeding machines; neither do I claim broadly the use of extension tubes; but I *claim* the arrangement and combination of the wheels E with the extension pieces *d*, in the manner and for the purposes substantially as described.

No. 18,690.—PHILIP M. GUNDLACH, of Belleville, Ill.—*Improvement in Seed Drills*.—Patent dated November 24, 1857.—D is the hopper, with perforations *a a* in its bottom. E the vibrating seed slide arranged on the bottom of the hopper, and furnished with a series of oblong slots *b b*. F is the vertical gauge and guard plate arranged against the front side of the hopper, and in a manner to be adjusted up and down by means of set screws *c c* and slots *d d*; said plate having a series of narrow, overhanging guards *e e* and downward-projecting spurs *f f*, *e e*. G G the drill tubes arranged in front of the axle C of the truck. H H are the radial clearing rods placed in the spiral lines round the axle and made of sufficient length to just clear the ground and to extend and pass up between the lower extremities of the tubes, in a manner to remove the weeds or grass or other impediments which may collect on their points and interfere with their entrance into the soil.

The inventor says: I am aware that clearers have been used to work between cultivator teeth for the purpose of clearing said teeth or tubes

from stubble, &c., and I do not, therefore, claim such feature broadly, but only with reference to my particular arrangement therefor.

I *claim*, 1st, the arrangement consisting of a variable, vibrating, slotted slide *E b*, vertical adjustable plate *F*, with a series of overhanging guards *e e*, and downward projecting gage spurs *d d*, and perforated hopper *D a*, for united operation, as and for the purposes set forth.

2d. The arrangement of a series of radial arms *H H* in spiral lines directly upon the propelling axle *C*, and of said axle and arms behind the seed tubes, and in such relation to the same that the arms pass successively between the lower extremities of the tubes, as and for the purposes set forth.

No. 18,688.—OLIVER C. GREEN, of Dublin, Ind.—*Improvement in the Measuring Apparatus of Seed Drills*.—Patent dated November 24, 1857.—This improvement relates to the construction of a reciprocating slide and its accessories adapted to measure out seed in a regular and continuous stream, and with the avoidance of any cutting, bruising, or crowding of the grains.

Claim.—As new and of my invention the construction and arrangement, as set forth, of the sheath *C* and the slide *D 1 2*, provided with the described passages *d d 3 3'*, operating, as explained, in combination with the seed box *A* of a grain drill.

No. 18,652.—WILLIAM WAKELEY, of Homer, New York.—*Improvement in Self-Feeding Drills*.—Patent dated November 17, 1857.—This invention consists in connecting the feed movement with the driving movement of the drill in such a way that both may be operated simultaneously, when desired, by turning a single crank, and the feed also operates singly or alone when necessary; so that the drill or arbor may be moved forward or backward with increased speed to any desired point or position.

Claim.—The inventor says: I claim the arrangement of the gearing, *J K F E¹*, as shown, whereby both pinions *E¹ F* may be operated at the same time, so that the drill *E* may be rotated and fed to its work by the rotation of a single shaft or crank.

I also claim the arrangement of the lever *M* with the shaft *g* and catch *k*, as shown, in connexion with the rod *L* and cross head *c*, with the pins *b b* attached, for the purpose of connecting the wheel *K* with the wheel *J*, and disconnecting it therefrom, as described.

No. 16,476.—RICHARD J. GATLING, of Indianapolis, Ind.—*Improvement in Machines for Following Land*.—Patent dated January 27, 1857. The steam power rotates the cam shaft *D* as the machine is drawn forward by animal power. This rotation forces the alternate spades *H* into the soil, by reason of the lifting of the levers by the cams. The flanges *m*, on the cams, produce a twist of the spade as it penetrates and leaves the earth, whereby the loosening thereof is effected. As the spade rises from the earth the spring *I*, connecting it with the lever *F*, draws it forward into a vertical position ready for the next descent.

Claim.—A series of spades having a combined vertical reciprocation and spiral twist, through the agency of a system of cams and levers, arranged and operated substantially as specified.

No. 16,547.—CHESTER P. MARSHAL, of Worcester county, Mass.—*Improved Fan Blower.*—Patent dated February 3, 1857.—The fixed partitions *g* in the air tube *c*, next to the fan *d*, are intended to prevent a rotation of the current of air and thereby to increase the strength of the blast.

Claim.—The application of fixed partitions in conducting air tubes of fan blowers in the manner and for the purpose described, or in any other way which shall be substantially the same.

No. 18,804.—CHARLES CLOW, ABRAM CLOW, and CHARLES N. CLOW, of Port Byron, New York.—*Improvement in Agricultural Forks.*—Patent dated December 8, 1857.—*E* is a wire bow at the back end of the fork to prevent the straw from sliding off when the fork is elevated; and the peculiar manner in which it is attached to the head is a part of this improvement. The manner in which it is attached is thus: at each extremity of the head is a small cylindrical projection *F F*, and these have grooves around them; the ends of the wire bow *E* are bent around in these grooves, thus forming a hinge joint, which permits the bow to be turned down on the tines by disengaging the brace *G* from the handle, said brace being jointed on the bow so that it will also lie down on the tines. When the bow is thus turned down, one fork or handle of the forks can be laid on another without trouble, and the inconvenience usually experienced in packing is thereby avoided.

The inventor says: We are aware that manure forks have been constructed with cast malleable iron heads, with sockets for the tines; but in all such forks the sockets have been parallel with the socket in which the handle was inserted, which cannot be done with barley forks, for reasons heretofore given.

We therefore wish it expressly understood that we do not claim a fork constructed with a cast malleable iron head of itself considered, nor any such head in which the sockets for the tines are parallel to the socket in which the handle is inserted.

But we *claim* jointing the bow *E* on to the head, for the purpose and in the manner substantially as described.

No. 16,388.—WILLIAM JONES, of Speedsville, New York.—*Improvement in Hay Forks.*—Patent dated January 13, 1857.—By operating set screw *D*, the conical point thereof forces apart the wedges *E*, pressing the tines *c* against the ferrule *F*, that confines them to socket *B*.

Claim.—The slotted socket *B*, for the reception of the tangs of the tines, when used in connexion with the wedges *E*, screw *D*, and ferrule *F*, or their equivalents, in the manner substantially as and for the purposes described.

No. 18,047.—WILLIAM JONES, of Speedsville, New York.—*Improvement in Hay and Manure Forks*.—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Casting the ferrule B upon, or otherwise securing it firmly to the outer end of a socket, in which are slots for the reception of the tangs of the tines of a fork, to prevent lateral working when in connection with a wedge F, cast or otherwise formed between the recesses made for the tangs, to prevent end play, and screws *a*, for the securing of the tines, socket, and handle to each other, substantially as set forth.

No. 18,670.—G. L. BARTON and A. E. ROBERTS, of Albany, New York.—*Improvement in Hay and Manure Forks*.—Patent dated November 24, 1857.—The claim and engraving explain the nature of this invention.

Claim.—A hay fork provided with an upright bow C, said bow being firmly held in its position by means of the rod D, which rod extends from the centre of the tines to the centre of the bow, and thence to the handle of the fork, the tines B provided with double crossbars *b b'*—all as set forth.

No. 18,503.—WILLIAM DOTY, of South Hartford, Conn.—*Improvement in Fruit Gatherers*.—Patent dated October 27, 1857.—This invention is more especially intended for harvesting and assorting apples. It consists in having an inclined apron placed on a suitable frame, and using in connexion therewith screens and conveying spouts, so arranged that the apples may, without injury, be shaken from the tree and assorted.

The inventor says: I am aware that screens and troughs have been used in various ways for screening articles and conveying them to the proper receptacles, and I therefore do not claim, broadly, inclined screens and troughs separately and irrespective of the arrangement shown.

But I *claim* the combination of the apron B, stretched or placed over the frame A, the screen D formed of the adjustable and stationary wires *e d*, and the inclined troughs F G¹—the whole being arranged as shown for the purpose specified.

No. 18,582.—FIRMAN GOODWIN, of Astoria, N. Y.—*Improvement in Fruit Gatherers*.—Patent dated November 10, 1857.—This invention consists in providing a metallic frame so formed as to serve the purpose of a rim for a bag which receives the fruit, and also to serve as the means to detach the fruit from the limb.

Claim.—The frame A formed of the elliptical and annular rims *a b* and socket B, the socket having an oblique position relatively to the frame, the outer *a* having the bag D attached, and the rim *b* provided with the projections *c c* and openings *d d*, as and for the purposes set forth.

No. 17,467.—JESSE WHITEHEAD, of Manchester, Va.—*Improved Machine for Dressing Water Furrows in Land*.—Patent dated June 2, 1857.—As the machine is drawn forward, rotary motion is communicated to the distributors A from the driving wheels B by means of pulleys, cords, and gearings; and the earth which the plough E lifts up from the furrow is scraped up on the table F, when it is scattered over the adjoining land by the distributors H.

Claim.—In combination with the coulter E and mould-boards G, which scrape off and smooth the sides of the furrow, and serve to guide and direct the machine along said furrow, the horizontal plate F, which shaves off the top of the furrow and receives all the excess of earth, and the distributors H, for scattering the earth therefrom, so as not to leave it in ridges—the whole being combined and operating together substantially in the manner and for the purpose set forth.

No. 17,135.—J. F. BARRETT, of North Granville, N. Y.—*Improved Apparatus for Binding Grain*.—Patent dated April 28, 1857.—The stock A holding the binding mechanism is secured to any convenient portion of the harvester by a bolt passing through slot *a*, and a cord from the driving apparatus which passes round pulley *d* causes said pulley to revolve. When the apparatus is in position as represented in the engraving, the lower face of pulley *e* rests upon the body *g*, and the pulley is stationary. In operation, the attendant holds the straw for the band in both hands, and receives the cut grain upon it as it falls. When sufficient for a sheaf has been received, he crosses the band, places it between the jaws *m*, then with his foot depressing lever *l*, pawl *h* turns on shaft C, pressing upwards spring B which encircles pulley *d*; the jaws *m* are closed and made to revolve, and by twisting the band, tighten it upon the sheaf.

Claim.—In devices for facilitating the binding of the grain, twisting or tightening the band after it has been crossed upon the sheaf by the operator, by means of jaws *m m*, working in balanced shaft *c*, in combination with the devices described for simultaneously closing and rotating said jaws substantially in the manner set forth.

No. 18,231.—JOSEPH F. BLACK, of Lancaster, Ill.—*Improved Machine for Binding Grain*.—Patent dated September 22, 1857.—The novelty of this device consists in a peculiar arrangement of the different parts whereby a requisite amount of grain presented to it will be bound into a sheaf in an expeditious manner, requiring but one attendant.

In the drawings H is a shaft placed on the lower end of the frame A; this shaft has four semi-circular arms I I and J J, placed loosely upon it, said arms when raised so that their outer ends will be in contact forming two eccentric circles as shown in the drawings. The arms I I are somewhat longer than the arms J J. The outer ends of the arms I have springs *n* attached. These springs are merely flat plates of steel attached to the arms. Each arm has a projection O, at its lower end.

Claim.—The inventor says: I claim the combination of the arms I I

and J J, and hooks or clamps *u v*, constructed and arranged to operate conjointly as and for the purpose set forth.

No. 18,988.—LODNER D. PHILLIPS, of Chicago, Ill.—*Improvements in Machines for Binding Grain*.—Patent dated December 29, 1857.—The nature of this invention is described by the claim and engraving.

The inventor says: I *claim* the circular revolving platform *n*, in combination with the rake *d¹ d² d³* and apron *c¹*, for the purpose of gathering the grain and conveying it to the binding receiver *v¹ v² v³*.

I also claim the construction and combination of the grooved arms *S¹ S²*, with the slotted lever *k¹*, for the purpose of carrying and crimping the band and compressing the stalks in proper shape for binding.

I also claim the construction and arrangement of the apron with straps and pins *v¹* in combination with the box *d e f g*, for the purpose of feeding the binding clamps with bands taken from the mass of straw placed in said box, one at a time.

No. 16,815.—SAMUEL D. WARREN, of Lebanon, Ala.—*Improvement in Grain Cradles*.—Patent dated March 10, 1857.—The inventor says: I am aware that the fingers of cradles have been "gathered." I do not, therefore, claim the principle of so doing; but I claim the combination of the standards C D F, fingers H, and speed A, when so made and united, so that by the bar G said fingers may be gathered or adjusted as set forth, and for the purposes explained.

No. 18,464.—DANIEL MIFFLETON, of King George C. H., Va.—*Improvement in Grain Cradles*.—Patent dated October 20, 1857.—In the engraving, A represents the snath; B, the scythe, which is attached to the snath by means of ring C and wedge *a*, which latter can be operated so as to secure or release the scythe by turning set-screw *b*; the fingers D are secured to the arm E by means of hook-bolts *d* and clamp-screws *h*, as shown in engraving; thus the length of the fingers can be adjusted to scythes of different lengths by sliding the rear ends within the hooks *d*, and when adjusted to the proper position they can be secured by means of screw-nuts *h*. The fingers D are secured and braced to each other by means of the screw-bolts *i*, passing through tubes *k*, the latter serving to keep the fingers distended in their true positions. The lowest finger D is secured to the scythe by means of the brace F, as shown in the engraving. *M* represents a square rod, which has a screw-thread *n*, cut at its upper end, working in the screw-nut *o* of the staple *p r* represents a square tube, which encloses the rod *m*.

Claim.—The inventor says: I claim the adjustable fingers D, in combination with the brace F, arranged and operating in the manner and for the purpose set forth.

No. 17,223.—HIRAM KELLOGG, of McHenry, Ill.—*Improvement in Machines for Cutting and Binding Grain*.—Patent dated May 5, 1857.—The grain being cut by the rotating cutters of this harvester, the stalks are drawn in between the fingers *b* of the sheaf-boards *a*, and the standing grain leans against the grip-rod *g^a*, the rods *g* and *g^a*

being then distended, as the machine moves on, arm P, coming in contact with arm r, closes rod g upon rod g^a, thus compressing the standing bundle of grain, when the operator, standing on platform e, binds the grain. The arm P now releases rod g, and spring J causes to fly back rod g for the reception of a new bundle of grain.

Claim.—The compressor device formed of the grip-rods g g^a, h, r, standard i, and spring J J^a, in combination with the striker P, when the same are constructed and operated substantially as described.

No. 16,498.—DANIEL W. SHARES, of Hamden, Conn.—*Improvement in Harrows.*—Patent dated January 27, 1857.—G represents the front tooth, having two divergent wings to throw the soil to each side of the track. The divergent wing, or covering portion of each tooth H, is formed with such curve towards the centre of the track as will best serve the purpose of loosening and mollifying the soil and cover it into the track of the preceding tooth without overturning or laying it over. The line of the front part of the teeth is continued a short distance below the line of the bottom edge of the covering portion of them to form the point I, which will elevate the teeth when cutting into stumps or roots. The teeth are secured to the bars B B by bolts inserted through the flanges J.

The inventor says: I do not claim the particular construction of the frame or the shape given to it as described, nor do I claim making the frame adjustable to different widths. I *claim* the construction and arrangement of the series of teeth H on the side bars B B¹, in relation to the said bars and to each other, in the manner and for the purpose specified.

No. 16,866.—SIDNEY S. HOGLE, of York, Ohio.—*Improvement in Harrows.*—Patent dated March 17, 1857.—The claim and engraving show the nature of this invention.

Claim.—The inventor says: I am aware that horizontal harrows have been so constructed that they could be rotated upon their axes.

I *claim* causing the forward movement of a pivoted horizontal harrow to impart a rotary motion thereto by means of the auxiliary action of a weighted roller, or its equivalent, upon one side or the other of said harrow, substantially as set forth.

No. 16,933.—JOHN E. MORGAN, of Deerfield, N. Y.—*Improvement in Harrows.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the connexion of the two parts of the harrow by means of the rod F.

Nor do I claim the sliding or horizontal movement allowed upon this rod, as described, without the use of the vertical movement.

But I *claim* the providing for the vertical action between the two parts of the harrow by means of the coupling formed by the use of the vertical elongated links E, operating on the rod F, or its equivalent, as described.

No. 17,121.—GEORGE W. TOLHURST, of Cleveland, Ohio.—*Improvement in Harrows*.—Patent dated April 21, 1857.—If this harrow be drawn forward by applying the draft to the tongue D, the teeth on the opposite side from the shield G will hold in the ground, and the whole frame A will turn horizontally on its centre support B. By raising shield piece G and lowering B, the harrow will turn in the opposite direction.

The inventor says: I am aware that harrows have been made to rotate by dragging them across the field, but they always rotate in one direction. This I do not claim, my object being to cause the harrow to rotate to the right or left, as circumstances may require. I effect my rotation by the harrow teeth themselves, whilst in the other plans one or more auxiliary wheels are used for the rotation, which is then only in one continuous direction.

I claim the adjustable shield pieces G G, in combination with the rotary harrow, substantially in the manner and for the purpose described.

No. 17,831.—JAMES B. GLASCOCK, of Fancy Creek, Illinois.—*Improvement in Rotating Harrows*.—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I am aware that a patent has been granted for combining a weighted lateral arm with the draft bar of a rotating harrow, for the purpose of causing the harrow to have a positive rotary movement when it is drawn forwards.

I claim causing the after end of the pivoted draft bar B to bear upon the upper surface of the rotating tooth frame A in such a manner as to properly distribute the propelling power exerted upon said draft bar, by which I relieve the fulcrum journal from injurious warping strains, and at the same time impart a steady and uniform movement to said tooth frame as it is drawn forwards, substantially as set forth.

No. 17,151.—M. G. HUBBARD, of Penn Yan, New York.—*Improvement in Harvester Frames*.—Patent dated April 28, 1857.—This invention consists in uniting the corners of the wrought iron bars which constitute a harvester frame, by means of a cast iron block provided with flanges *a t*, fig. 2, for the reception of the ends of the bars, and securing bars and block together by means of a bolt *b*.

Claim.—Joining the parts of the frame, substantially as described, by means of the lock plates or irons and bolts, so as to make a firm and rigid union between the parts at a small cost, as set forth.

No. 18,686.—ELIAS T. FORD, of Batavia, N. Y.—*Improvement in Harvester Rakes*.—Patent dated November 24, 1857.—In figure 1 the gathering arms G G are opened and in the act of closing, and the ends of the spring platform L L are elevated by the wire bail N N to the circle described by the movement of the gathering arms, which are made to close, gathering the cut and falling grain upon the platform L L, retaining the same and removing the gavel W thus gathered to the rear; the arms then open and deposit the same upon the sta-

tionary platform W W; the arms continue to move forward until they reach nearly the front end of the spring platform, and then close and gather the second gavel; at this moment the combined levers H H and folding canvas Y Y drop, and effect a sudden division of that portion of the grain gathered from that being brought in by the reel, at the same time preventing all drivelling of the grain.

Claim.—The gathering arms G G, in combination with the spring platform L L, grain driver H H Y, and gavel remover V; the whole being arranged in relation to and operated by the rock shaft I, and cam F, for the purpose set forth.

No. 16,441.—M. G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated January 20, 1857.—The nature of this invention consists in forming the cutting standard *m* and track-clearer *n* in one piece, the cutter *m* being hinged at S to the shoe and resting against the fulcrum post *b* by which it is supported; this arrangement serving the purpose of separating the cut grass from the standing grass where it is heavy and tangled together.

Claim.—The combined cutting standard and inclined track-clearer, when constructed and operating substantially in the manner and for the purpose set forth.

I also claim hinging the cutting standard and track-clearer forward of the finger bar, and near the front end of the shoe, and supporting the same against lateral pressure by means of the fulcrum post *b*, as above specified.

No. 16,445.—PELLE MANNY, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

Claim.—Connecting the leading board D to the main frame A, by means of the curved elastic shoe C, rigidly attached at its front to the leading board, and at its back to the under side of the main frame by joint C, in rear of the finger bar and in front of the driving wheel, when said leading board serves to carry the fulcrum of the seat lever F, by which the front of the main frame is raised and lowered, substantially in the manner specified.

And I further claim the combination and arrangement for operation together of the seat lever F and foot lever or treadle E, essentially as set forth, for the purposes described.

No. 16,484.—MOSES G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated January 27, 1857.—The finger-bar F is affixed to the frame A by two flat elastic braces E E, rigidly attached to the frame and finger-bar, so that the finger-bar can have a vertical motion independent of the frame, its motion being governed by the surface of the ground when in action, or raised above it when not cutting by the operator.

Claim:—The mode of attaching the finger-bar F to the frame A by means of two flat springs *e e*, when the same are so constructed and

arranged as to operate in relation to each other substantially as and for the purposes set forth.

No. 16,763.—DAVID WATSON, of Newark, N. J.—*Improvement in Harvesters*.—Patent dated March 3, 1857.—The gate J, when closed to the platform H, as represented in figure 3 by full lines, prevents the cut grain from passing off the platform; but when the operator throws the gate open (see position of the gate represented in fig 3, by dotted lines) the cut grain is carried off by the endless apron I, said apron acting upon the outer parts of the stalks, and causing the grain to pass obliquely off the inner corner of the back end of the platform.

The inventor says: I do not claim separately an endless apron for discharging the cut grain from the platform; for endless aprons, and in some cases gates, have been previously used for the same purpose.

But I *claim* the gate J, in combination with the inclined endless aprons I and platform H, when arranged and operated in the manner and for the purpose specified.

No. 16,721.—STILLMAN A. CLEMENS, of Rockford, Ill.—*Improvement in Harvesters*.—Patent dated March 30, 1857.—The revolution of the driving wheel D causes the catch teeth on the edge of its rim to lift the end of finger R, which, moving the rock shaft Q, causes arm P to vibrate inwards and press against the end of sickle rod N, carrying the nut T against the spring S. As soon as the tooth leaves the finger R, the force of the spring S causes the sickle bar to slide back, when the finger will be ready for the next tooth. U is an elastic cushion upon the sickle bar, which cushion, when striking the plate O, serves to arrest the force of the spring S.

Claim.—The method of operating the sickles of harvesters by means of a catch wheel and a recoil cushion connected, combined, and attached, substantially as described.

No. 16,730.—LEWIS W. HARRIS, of Waterville, N. Y.—*Improvement in Harvesters*.—Patent dated March 3, 1857.—The inventor says: I am aware two rock shafts, with segmental wheels and pallets, have been worked from a crown wheel, and to one of which shafts the pitman was connected to vibrate the cutters; this I do not claim. But what I do *claim* is, first, in combination with the alternately projecting lugs *a b*, the rocking shafts L L, with their toe-pieces, cranks, and connecting rod N, for the purpose of operating the cutters as set forth.

I also claim hanging the shafts L L in the hinge pieces K K, when said hinge pieces are put within the control of the conductor by means of the rods *h h* and treadle, or their equivalents, so that he may from his seat throw the cutters into and out of gear, as herein set forth and explained.

No. 16,788.—HIRAM CLARK, of Rochester, N. Y.—*Improvement in Harvesters*.—Patent dated March 10, 1857.—The cutter bar J is attached to levers *m m'*, and the cutter bar F to levers *w w'*; arms C connect

the upper ends of the levers to cranks on shaft M. The revolution of the shaft and cranks will impart to the cutter bars the motions described in the claim.

The inventor says: I do not claim double cutter bars, nor an advancing and withdrawing stroke.

But I *claim* giving to each of the cutting bars, alternately, an advancing upward stroke against the grain, as specified.

No. 16,840.—M. G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters*.—Patent dated March 17, 1857.—This improvement relates to a shifting seat which may be used in combination with a mower and reaper, or harvester. The seat is of ordinary and convenient form, as seen at *w*; it has four legs *u*, permanently affixed to it, and simply resting upon the frame, without being affixed to it. On each side there is a straight or other conveniently formed rod *m*, pivoted at S to the frame at one end and to the centre or other convenient point on the seat underneath. This attachment holds the seat securely in its place, and allows it to be at any moment thrown forward of the axle or back of it, as seen in the engravings.

The inventor says: I *claim* a shifting seat, when constructed, arranged, and combined with a harvester, substantially in the manner and for the purposes set forth.

No. 16,836.—CORNELIUS HOLLOWAY, of Petersburg, Va., assignor to JAMES D. MANNY.—*Improvement in Harvesters*.—Patent dated March 17, 1857.—A cam or eccentric P is connected to the finger bar H by a link Q, and the tongue K to this cam by a strap T passing around it, which strap is fastened to the tongue A; crank R is connected to the cam, so that, by turning said crank the front of the machine may be raised or lowered at pleasure on the tongue. The slot O in the tongue admits of the moving of the machine to and fro; and the rear of the tongue being connected to a pivoted lever, the swinging of said lever compensates for the horizontal backward and forward motion of the machine.

The inventor says: I am aware many devices have been arranged for raising and lowering the cutters from the tongue of the machine. This I do not claim, independent of my special manner of accomplishing this end.

But I *claim*, in combination with the cam P connected to the frame by a link Q and to the tongue by a strap or yoke, the slot O at front, and the lever connexions L M at the rear, so that the machine may swing forward and back as it is lowered or raised, but be rigid when the draught is on, as set forth.

No. 16,957.—SAMUEL S. ALLEN, of Bristol, Pa.—*Improvement in Harvesters*.—Patent dated April 7, 1857.—By the arrangement of the sliding pole V, in connexion with the draught rod *m*, the point of traction, instead of being on one side of the machine, as usual, is removed so near to the centre that the side draught is avoided; at the same time that ample room is afforded to the horses without interfering with the standing grain.

Claim.—The combination of the upper platform Q and sliding pole V with the main frame C and inclined draft-rod or chain, when the same are constructed and arranged for joint operation substantially in the manner and for the purpose set forth.

No. 16,985.—PELLE MANNY, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated April 7, 1857.—By operating the rod *l*, the driver, from his seat C, is enabled to raise or lower the finger-bar *c*, the lower pivoted end of which leans against the elastic shoe *b*. The movement of the rod *l* is effected in the direction of its length.

Claim.—Raising and lowering the finger-bar of harvesters by means of the adjusting stanchion *k*, when used in combination with the elastic shoe *b*, rigidly attached to the draft-bar or pole, and jointed to the main frame in front of the driving wheel and back of the finger-bar; the whole being constructed for joint operation, substantially in the manner and for the purposes set forth.

No. 16,984.—PELLE MANNY, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination of the smooth elastic cap or sheath *c*, connecting the divider *b* with the main wing C, with the reversed hook or bent projecting end *d* of an automatic rake; when said parts are constructed and arranged for joint operation, essentially in the manner and for the purposes set forth.

No. 17,123.—J. C. WILSON and T. G. WILSON, of Cedar Hill, Texas.—*Improvement in Harvesters.*—Patent dated April 21, 1857.—The grain, being received upon the endless apron A, is conveyed to the inclined grating *g*. The reel *e* is kept stationary by spring *i* coming in contact with one of the teeth of ratchet *h*. The arm *m*, on wheel *l*, raises spring *i*, thus releasing ratchet-wheel *h*; and arm *n*, on wheel *l*, turns the arms *o* of the reel-shaft, the reel *e* discharging the gavel from the grating *g*. The reel is then arrested by spring *i* coming in contact with the next tooth on ratchet-wheel *h*, and the operation is repeated.

Claim.—Operating the reel by means of the rigid pin *m*, and spring-arm *n*, attached to pulley *l*, in combination with ratchet *h*, arms *o*, and holding spring *i*, when said parts are arranged to operate in relation to each other, as and for the purpose set forth.

No. 17,157.—ISAIAH KNAUER, of Valley Forge, Pa.—*Improvement in Harvesters.*—Patent dated April 28, 1857.—The rotation of shaft S causes the crank *k* to move within the box B, while the pressure of the pin *p* against the sides of the slot *n* produces the reciprocation of the box and cutter-bar attached thereto.

The inventor says: I make no claim to the manner of producing the reciprocation, as that is not new.

But I *claim* the peculiarly constructed close box B, in combination with guides G G and cover C, when arranged to operate in the manner and for the purposes set forth.

No. 17,280.—MOSES G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters*.—Patent dated May 12, 1857.—By taking hold of handle *h* and turning crank *d* half of one revolution, the gear *k* will be moved twice the length of the crank from its pinion, and the machine is thus thrown out of gear.

Claim.—The combination of the shifting fork *f*, short crank *d*, and handle *h*, or their equivalents, for throwing the machine out of or into gear, when constructed and arranged substantially as and for the purposes set forth.

No. 17,277.—MOSES G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters*.—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The employment of the cogged segment *C* attached to the pole rocker in combination with the worm *P*, for the purpose of elevating and depressing the frame as set forth.

No. 17,451.—W. T. B. READ, of Alton, Ill.—*Improvement in Harvesters*.—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Making the shoe *E* in one piece, as described, so that, by its peculiar formation, it shall serve not only as a support for the finger bar *A*, and as a support and guide for the inner end both of the sickle bar *C* and connecting rod *D*, but also as a means of preserving the connexion between the connecting rod and sickle bar, as set forth.

No. 17,555.—NICHOLAS CLUTE, of Dunnsville, N. Y.—*Improvement in Harvesters*.—Patent dated June 16, 1857.—The endless apron *L* is caused to revolve on its rollers *L*¹ and *L*², at a greater speed than the rake-head *K* travels with the chains *I*³, and carries forward any loose straw that lies across the rake-heads, so as to clear the heads and let the grain fall clear into the gavel box *K*².

Claim.—The raking apparatus described, consisting of the endless belt *I*³, carrying arms or rakes *K K*, when used in combination with the endless clearing apron *L* and curved and elevated platform *K*, all arranged to operate in the manner and for the purposes set forth.

No. 17,676.—HENRY D. HAMMOND, of Batavia, N. Y.—*Improvement in Harvesters*.—Patent dated June 30, 1857.—For the passage of an obstacle, the turning of the shaft *p*, by power applied to arm *g*, effects the simultaneous elevation of the frame *x* and of the points of the cutters *a h*.

Claim.—The shaft *p*, with arms *o*, *s*, and *q*, relatively attached thereto, as described, in combination with the swinging flanged supporting bar *B* and the journaled cutter and finger bar *I*, connected with arm *o*, when said parts are arranged for joint operation in the manner and for the purposes described.

No. 17,691.—DANIEL S. McNAMARA, of North Hoosick, N. Y.—*Improvement in Harvesters*.—Patent dated June 30, 1857.—The yoke ring in which the end of the tongue is placed fits in a recess *o* on the rod *F*; and when the team is backed, the shaft *i* will be actuated through the medium of the lever *k*, and the latter will come in contact with lever *E*, and raise the same together with the cutter bar *D*.

The inventor says: I do not claim the lever *E*, for that has been previously used, and is quite a common device for raising and lowering the sickles of harvesters.

But I *claim* connecting the shaft *i*, by means of the arm *K* and link *i*, with the rod *F*, placed at the underside of the draught pole *C*, and connected with the yoke ring, substantially as described for the purposes set forth.

No. 17,705.—CHARLES T. STETSON, of Amherst, Mass.—*Improvement in Harvesters*.—Patent dated June 30, 1857.—By having the finger bar *G* arranged as represented in the engraving, it is allowed to yield at either end, and to conform perfectly to the irregularities of the ground.

The inventor says: I am aware that the finger and cutter bars of reaping and mowing machines have been variously attached, so as to conform to the irregularities of the ground; and I therefore do not claim attaining this end irrespective of the peculiar means employed for that purpose.

But I *claim* attaching the finger bar *C* to the frame *A*, by means of the guides *i i* and the grooved segment guides *e*, the inner end of the bar being provided with friction rollers *d*, which are fitted and work in said segment guides *e*, the parts being arranged substantially as described for the purpose set forth.

No. 17,779.—JOHN P. MANNY, of Rockford, Ill.—*Improvement in Harvesters*.—Patent dated July 14, 1857.—By raising the lever *J*, by means of cord *g*, on pulley *J*, bolt *a* is raised, and also the system of levers *L* and *M*, throwing the whole into the position represented in figure 3; and the effect of these combined levers is to retain the platform *P* of the harvester in a horizontal position when raised or lowered.

Claim.—The combination of two frames, one of which is adjustable, and can be raised or lowered at pleasure with the lifting piece *L* and platform *P*, hinged to said adjustable frame, when said parts are constructed and arranged to operate in relation to each other, in the manner and for the purpose set forth.

No. 17,942.—N. C. SHERMAN and S. LIGHTCAP, of Hazle Green, Wis.—*Improvement in Harvesters*.—Patent dated August 4, 1857.—By throwing back collar *H*, the wheel *G* is left loose and turns upon its axis in the usual manner; and by throwing forward collar *H*, the pin *j* passes into the recess of the collar, and the wheel is prevented from turning on its vertical axis at *g*.

Claim.—The combination of the peculiarly formed adjustable collar *H* with the caster frame *f*, in the manner described, whereby the caster wheel may be, at the pleasure of the driver, held rigid in line

parallel with the driving wheels, or released so as to turn in the ordinary manner.

No. 17,945.—CHARLES TINKER and J. A. SPRAGUE, of Mantua, O.—*Improvement in Harvesters*.—Patent dated August 4, 1857.—By operating one of the levers Z or Z', one end of the cutter bar V can be raised to avoid any obstacle that may occur; and by raising both levers simultaneously the cutter bar is raised horizontally, as it is required when the machine is to be moved from one locality to another,—in that case the machine will run upon the four wheels, B, O, Y.

Claim.—The vibrating arm K, parallel rod I, and connecting rod T, in combination with the bent levers X X, fulcrum wheels Y Y, levers Z Z', and stops U U, when the same are arranged to operate in relation to each other, (and used in connexion with a self-adjusting cutter and finger bar,) substantially in the manner and for the purpose set forth.

No. 17,927.—SAMUEL GUMAER, of Chicago, Illinois.—*Improvement in Harvesters*.—Patent dated August 4, 1857.—As the machine is drawn along, a vibrating motion is given to the cutters *m* and *m*¹ by means of the crank pins *r*, pitmen R, and levers *p* turning on the fulcrum *g*¹, and the grain is cut by the action of said cutters and falls on to platform A.

Claim.—The combination of the blades *m* *m*¹ with the peculiarly constructed platform A and the center swell reel C, when said parts are arranged to operate in relation to each other as and for the purpose set forth.

No. 18,173.—C. M. LUFKIN, of Acworth, N. H., assignor to NORRIS LUFKIN, of Unity, N. H.—*Improvement in Harvesters*.—Patent dated September 8, 1857.—The cutters *o* *n* are pivoted to the finger-bar D, and work on said pivots 1 2, they being operated upon by pitmen *r* *s* and bars *p* *g*. The inner semi-circular ends of the cutters *n* are sunk into plate J, so that the plate J is flush with cutters *n*; by this arrangement the cut grain or grass cannot choke or clog the cutting device.

The inventor says: I am aware that two series or sets of cutters, working one set over the other, like shears, have been previously used, and I therefore do not claim cutters thus arranged.

But I *claim* the combination of the cutters *n* and *o*, with the peculiarly constructed plate J, arranged and operating in the manner and for the purpose above set forth.

No. 18,267.—SAMUEL PENNOCK, of Kenneth's Square, Pa., assignor to himself and MORTON PENNOCK, of the same place.—*Improvement in Harvesters*.—Patent dated September 22, 1857.—This invention consists in placing the crank shaft E within a frame which is pivoted to the main frame A, and operated by an eccentric, so that the shaft guiding the frame may be easily thrown out of gear.

The inventor says: I *claim* adjusting and regulating the position of the crank shaft E by means of mechanism constructed, arranged, and operating in the manner set forth.

No. 18,240.—ANDREW B. I. FLOWERS, of Greenfield, Ind.—*Improvement in Harvesters*.—Patent dated September 22, 1857.—This invention relates to guiding the machine. The plates $L L^2$ of the caster wheels $K K$ have gear teeth cast upon their peripheries, and also on their flat surfaces. The edges of these plates serve, to a certain extent, as guides for themselves and for the caster wheels. It will be seen that the two pinions $n n$ gear respectively with the teeth upon the upper and lower surfaces of the plates $L L^1$, so that by turning the hand wheel N both caster wheels are simultaneously turned in the same direction.

The inventor *claims* guiding the machine by means of the caster wheels $K K$, upright shaft i , and the horizontal shaft M , in combination with the peculiarly constructed caster plates $L L^1$, said parts being arranged to operate in relation to each other in the manner set forth.

No. 18,390.—REUBEN DANIELS, of Woodstock, Vt.—*Improvement in Harvesters*.—Patent dated October 13, 1857.—The object of this improvement is to divide the delivered grain on the discharging platform from that which is being delivered by the carrying bands, to prevent collision between the rake and the mechanism which supports it as it descends, in order to divide the grain and discharge it from the machine, and also to support the rake in the arms that communicate to it reciprocating motion for the purpose of discharging the gavels, so that it may turn on its axis, and also rise and fall vertically on these arms.

The inventor says: I *claim*, 1st. The combination of the carrying bands and the pressure feed-rollers with the rake, when arranged and operated substantially as described.

2d. The combination of the spring comb with the rake, carrying bands and pressure rollers, when arranged in the manner and for the purpose described.

3d. The rake when arranged in the arms that support and give to it its reciprocating movement, as described, in combination with the mechanism for raising, lowering, and turning it in these arms for the purpose set forth.

No. 18,405.—N. A. PATTERSON, of Kingston, Tenn.—*Improvement in Harvesters*.—Patent dated October 13, 1857.—In this improved machine, by turning the shaft G , the axle B will not only be turned, but the double tree L will also be moved or shifted; for instance, if the shaft be turned from left to right, the axle B will be moved or turned, and the double tree L will be moved to the left, and if the shaft be turned in a reversed direction, the axle and double axle-tree will be moved in reversed directions. Consequently, whenever the machine is to be turned, the team is moved towards the wheels having the greatest circuit to pass over, and the power or draught is, therefore, applied where it is most needed, viz: near said wheels, so as to act in the most direct manner in turning the machines.

The inventor *claims* connecting the axle B with the double tree L , substantially as and for the purpose set forth.

No. 18,562.—HOSEA WILLARD and ROBERT ROSS, of Vergennes, Vt.—*Improvement in Harvesters*.—Patent dated November 3, 1857.—This invention consists in forming cutters so that they can be raised to suit any inequality of ground, or elevated bodily when moved from place to place.

The inventors say: We do not claim broadly attaching the finger bar to the machine by a joint, for this has been previously done.

But we *claim* the combination of the hinged finger bar L with the adjustable bar I, lever P, regulating set screw *f*, and wheel *o*; the whole being constructed and arranged in relation to the main frame for joint operation, in the manner and for the purpose set forth.

We also *claim* lever P and regulating set screws *f*, in combination with bar I, chain or cord J¹, pulley *i*, and clutch Q, for the purpose of raising the hinged finger bar L, as described.

No. 18,813.—SEYMOUR JOHNSON and LEICESTER JOHNSON, Aurora, New York.—*Improvement in Harvesters*.—Patent dated December 8, 1857.—To a rectangular frame, of any suitable form, having the finger-bar attached to the back end, the third wheel C is attached on the side of the frame opposite the platform, with its centre nearly over the end of the finger-bar, and back of the drive wheel, so that lines connecting the three wheels A B and C will form a triangle, A being in front, so that the line connecting its centre with the centre of C shall form an angle of nearly forty-five degrees with the frame. By placing the gearing on the outer side of the drive wheel its weight is brought to bear on the wheel C, thereby counteracting the side draught occasioned by the platform. To the front part of the frame is attached a draught pole R, and at the side or sides of the pole, at the place of its attachment to the frame, is placed a movable block or blocks *v v*, by moving which the position of the pole is moved, and the line of draught varied at pleasure.

Claim.—The arrangement of the outer wheel C, drive wheel A, and inner wheel B, in combination with the adjustable draught pole R and movable blocks *v v*, the whole being arranged for joint operation substantially in the manner and for the purpose set forth.

No. 18,938.—WILLIAM WEBBER and JOHN WEBBER, of Rockton, Illinois.—*Improvement in Harvesters*.—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Communicating motion from the main shaft *a* of the driving wheel to the cutter blade by means of the intermediate shafts *c d*, arranged parallel with each other on opposite sides of the bearing wheel A in such a manner that pulleys on the after ends of said shafts may be banded to each other, and a regulating fly-wheel be combined with the shaft *d*; the whole being constructed and arranged for joint operation substantially in the manner and for the purpose set forth.

No. 19,001.—WALTER A. WOOD, of Hoosick Falls, New York.—*Improvement in Harvesters*.—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—So filling up the space between the forks or hounds of the

tongue with the caster block, to which the caster wheel R and lever S are attached, as that, by the introduction of a rod that passes through them, as at *g*, they may be made rigid and serve to support each other in turning the machine, in the manner and for the purpose set forth.

No. 19,002.—WALTER A. WOOD, of Hoosick Falls, New York.—*Improvement in Harvesters*.—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—So constructing the frame of a combined reaping and mowing machine, and combining it with a spring track-clearer, as all that part of the frame in rear of the cutter-bar may be disjointed and removed by simply taking out the bolts *m n t*, said track-clearer remaining attached for the purpose of adapting the machine to the cutting of tangled or lodged grass, without obstruction, whilst the machine, with the driver upon it, remains perfectly balanced, as set forth.

No. 18,981.—JOHN LONG, of Masillon, Ohio.—*Improvement in Harvesters*.—Patent dated December 29, 1857.—In describing the operation of this invention, the inventor says: Suppose the machine to be moving forward, and the shaft 2 to be in the position to the complex spur wheels $L^1 L^2$, spur wheel L^1 meshing with vibratory shaft 2, moves the shaft in the direction it revolves, exactly half the distance its sectional teeth N are apart, where spur wheel L^2 meshes with the shaft 2, and moves the shaft the same distance back again to the point where the spur wheel L^1 meshes with the shaft, and so on; the complex spur wheels thus mesh alternately with the vibratory shaft, and impart to the knife bar a quick, regular, vibratory motion.

The inventor says: I am aware that cranks and cam wheels have been used in mowers and reapers for driving the vibratory knife bar, and being old devices do therefore not claim them; but I *claim* giving the cutter bar *g* the vibratory motion by two complex spur wheels $L^1 L^2$, in combination with the reciprocating shaft 2, the whole being constructed and arranged in the manner and for the purposes set forth.

No. 17,687.—JOSEPH S. MANNING, of Philadelphia, Pa.—*Improved Automatic Rake for Harvesters*.—Patent dated June 30, 1857.—As the machine is moved along, the driving wheel gives motion to the endless belts *o*, and to the rakes; and as the rake teeth 2 3 pass above the slats R P, they gather the cut grain and deposit it from the ends of the platform; when the rollers, on levers 4, drop through the openings *a*, the teeth fold by the turning of the bar 1, so as to admit of the rake passing below the platform R P, and having reached the right side of the same the end of the centre tooth 3 projects through opening *b*; the belts in the meanwhile passing on cause the teeth 2 and 3 to be set up for another clearing of the cut grain from the platform.

Claim.—The described raking device, consisting of cross bar 1, teeth 2 2 and 3, swinging bars 4 4, and supporting roller 5, when the same is used in combination with the peculiarly constructed platform P P R B, in the manner and for the purpose set forth.

No. 18,070.—JOHN W. BROKAW, of Springfield, Ohio, assignor to WARDER, BROKAW, and CHILD, of the same place.—*Improvement in Automatic Rakes for Harvesters*.—Patent dated August 25, 1857.—Motion being given the crank G, the rake-head I is moved over the platform by means of pitman H, and the teeth rake off the grain from the platform; the guide roller *i* passing under the spring guide P; the roller, when arrived at the end of the platform, passes down to the lower edge of the guide rail R, the rake being thrown by that movement to the position represented in dotted lines, when it is ready to rake off the grain which has accumulated on the platform.

Claim.—the arrangement of the spring guide P and double guide bar B, in combination with the rake-head I, carrying friction rolls *h* and *h*¹, constructed, arranged, and operated in the manner substantially as set forth. Also, the friction rolls *g*, in combination with the sleeve *f*, rake-head I, and guide rod *o*, as arranged and operated for the purposes set forth.

No. 18,697.—JOSHUA KETCHAM AND JOHN WATERMAN, of Orangeport, New York.—*Improvement in Bean-Harvesters*.—Patent dated November 24, 1857.—In fig. 1, A A¹ A² are the frame work of the machine, E is the head gatherer; this head is provided, as seen, with teeth, or cutters, marked O; these teeth are pivoted to the head, and are ground in a working machine to a wedge on top, in order to more easily disengage the beans and vine. F is a slide, for the purpose of assisting in pulling off the beans and vine and of removing them from the head; this slide is connected with roller D by means of levers *a* and *b*. D is a revolving backward and forward by means of lever G and rod B, which connect with the handle C. This roller serves to operate slide F, giving it motion, whereby it assists and relieves the head E.

Claim.—The slide F, for the purpose of pulling and dislocating the beans and carrying them away over the head, and this slide F, in combination with roller D and levers *a* and *b*, operated by means of lever G, rod B, and handle C, for the purpose of forming a bean harvester, as set forth and described.

No. 16,921.—ABRAM HEULINGS, of Philadelphia, Pennsylvania.—*Improvement in Corn Harvesters*.—Patent dated March 31, 1857.—The corn stalks are seized as soon as cut by person standing on the fixed platform P¹, and are placed upon end against the securing gates *b c*. When the tilting platform P² is filled with the cut product, the driver moves lever *l* into the position of figure 2, causing the shaft *a* to turn and tilt the platform P². The turning of this platform causes the curved arms *d* of the posts *b* to press against the links *e* and produce a partial rotation of said gate-posts simultaneously with the tilting of the platform P². This turning of the posts *b* effects the separation of the bars *c* and the load glides from off the machine. The driver then draws the long arm of the lever *l* towards him, and the platform P² and gates are ready for the reception of another load.

Claim.—The combination of the tilting platform P, the gates *b c*, curved arms *d*, and swinging links *e*, with the rock shaft and its operating lever and rod, when said parts are arranged for joint operation substantially as described.

No. 17,729.—ISRAEL DODENHOFF, of Bloomington, Illinois.—*Improvement in Corn Harvesters*.—Patent dated July 7, 1857.—As the machine is drawn along, the knife *F*¹ is vibrated between its ways *b*; and as it works against the stationary knife *F*, the corn is cut by the action of said knives. The stalks are fed towards the cutters by means of the teeth *i* of endless belt *K* and guide-bars *L*. When cut, they are deposited in the revolving collector *N*.

Claim.—First. The arrangement of the knives, in relation to each other, when combined with the peculiar shape of the teeth for the purposes substantially as set forth.

Second. The armed belt *K* and spring guide-bars *L*, for holding, guiding, and carrying the corn, so as to deposit it in the arms of the collector *N*, in the rear of the machine, in combination with the cutting apparatus, the whole being arranged in relation to each other in the manner substantially as set forth.

No. 17,832.—G. D. HAWORTH, of Mechanicsburg, Ill.—*Improvement in Corn Harvesters*.—Patent dated July 21, 1857.—As the machine is drawn along, a reciprocating motion is given to the cutters *I*, in consequence of cam *H* working between the two rollers *l*; the cutters work in an arc of a circle, and the cut stalks fall upon the arms *i* of the shaft *X*; and when sufficient stalks are cut to form a gavel, the shafts *X* are turned by the driver by operating lever *z*, when the stalks will fall to the ground.

Claim.—The cutters *I*, attached to suspended rods *J*, the cutters being curved, and working underneath stationary teeth or fingers, substantially as described for the purpose specified.

No. 18,747.—ADAM HUMBERGER, of Somerset, Ohio.—*Improvement in Corn Harvesters*.—Patent dated December 1, 1857.—By this invention two rows of corn may be cut, bound, and shocked with ease and rapidity, the cutter being drawn by a horse and attended by a boy.

The inventor says: I am aware that shafts with revolving arms and knives have been used in connexion with guards for conducting cut stalks upon a platform or table. Therefore, I do not claim these devices as heretofore employed, neither do I claim the carrying table, *P*, when moved with its supporting frame.

But I *claim*, 1st. The large shafts, or rollers, *E E*, turning upon the fixed axle *D D*, and having radial arms *L L* and *H H*, with knives *I I*, in combination with the guards *M M*, *G G*, and *F F*, and knives *K K*, for the purpose of cutting the stalks, and securely conducting them across the table *B*, to the binding table *P*, as set forth.

2d. I claim the table *P*, when movable upon its supporting frame, in combination with lever *U* and clamps *R R*, for binding and shocking the corn, as set forth.

No. 18,769.—JOHN H. RIBLE, of Somerset, Ohio.—*Improvement in Corn Harvesters*.—Patent dated December 1, 1857.—This invention has reference to the cut product and depositing it in shocks. It consists of a re-entrant angled reel *R*, to carry the stalks to the middle of the machine, and a receiving apparatus, consisting of a bed *f*

and arms *k l*, operating to hold the stalks until sufficient have accumulated to constitute a shock, and deposit the same butt downward upon the ground.

The inventor says: I *claim* the combination of the bed *f* and arms *k l* with the movable carriage C, or its equivalent, so as to receive the cut product and deposit the same as described.

I also claim the re entrant reel, in combination with the receiving apparatus, as described.

No. 16,442.—M. G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Cutters for Harvesters*.—Patent dated January 20, 1857.—This cutter is formed with a thick steel cutting edge, *b*, towards the fingers having a thin web or centre *a*, which fills up the triangle, by which means the friction between fingers and cutters is reduced.

The inventor says: I do not claim forming the edges of cutters by bending a plate of steel at its edge, and thus making an offset for the cutting edge; for this has before been done by Hazzard Knowles, many years since.

I *claim* the cutter, when formed in one piece, as seen in figure 2, constructed substantially as and for the purposes set forth.

No. 16,968.—SAMUEL COMFORT, jr., of Morrisville, Pa.—*Improved Cutting Apparatus for Harvesters*.—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that springs have been used for the purpose of pressing the knives of harvesters together, and thereby increasing their cutting effect, so arranged, however, as to have an extensive frictional surface. I therefore do not claim exclusively the employment of such springs.

But I *claim* as an improvement on the cutting apparatus of harvesters, for which a patent was granted to me on the 18th of March, 1856, the springs B, with their twisted or bent projections *h*, in combination with the endless chain of cutters D and E, and stationary knives F, when the said parts are constructed and arranged for operation in the manner and for the purpose set forth.

No. 17,745.—JOHN P. MANNY, of Rockford, Ill.—*Improved Cutting Apparatus for Harvesters*.—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Causing a series of cutters D to cut from right to left and from left to right, between each pair or set of fingers B at every single revolution of said series of cutters upon their shaft C, or journals, substantially as described.

Also in combination with such series of cutters the recess *g* in the sides of the fingers into which they may enter, to enable them to clear themselves from the clogging matter that gathers and accumulates, unless somehow prevented, in all harvesting machines, as set forth.

No. 17,739 — JOSEPH IRWIN, of Frankfort, Ohio.—*Improved Cutting Apparatus for Harvesters*.—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that spiral cutters have been used before; I am also aware that a continuous spiral bar has been used in combination with stationary cutters, as in the patent of A. Armsden, and I do not claim such devices.

But I *claim* the spiral cutters *e f*, when the same is arranged below, and used in combination with the curved cutting fingers *h h*, in the manner and for the purpose set forth.

No. 18,659.—JAMES L. FOUNTAIN, of Rockford, Ill., assignor to Himself, L. J. CLARK, BRADFORD MCKINNEY and C. M. FOUNTAIN, of Rockford, Ill.—*Improved Apparatus for Harvesters*.—Patent dated November 17, 1857.—E E in fig. 1 are holding plates, keeping the cutters down upon the upper surfaces of the lower limbs of the guard fingers C, and their horns G. By sectional figure 2, the relative position of the finger bar A, the finger C with its horn G, the cutter bar B, cutter D, and upward projection *a'* is plainly shown.

Claim.—The inventor says: I do not wish to be understood as claiming broadly either the combination of an inclined cutting edge with a straight edge on the finger, the cavities *c c*, or the clearing pins *a' a'*.

But I *claim* the fingers C, when constructed in the peculiar manner above described, in combination with the horns or projections G, reciprocating sectional cutters D, and clearing rivets, *a' a'*, the whole constructed and arranged for joint operation in the manner and for the purpose set forth.

No. 17,575.—M. G. HUBBARD, of Penn Yan, N. Y.—*Improvement in the Cutting Apparatus of Harvesters*.—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that the cutters of reaping and mowing machines have been attached to the cutter bar by means of a single bolt or screw to each cutter, and consequently I do not claim such mode of fastening.

Neither do I claim the device patented to William Hovey, April 29, 1856, and from which my invention radically differs.

But I claim the mode of attaching the cutters *c* to the cutter bar *v*, substantially in the manner, by the devices, and for the purposes set forth.

No. 18,052.—PELLS MANNY, of Waddam's Grove, Ill.—*Improvement in the Cutting Apparatus of Harvesters*.—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The method of constructing the fingers of the cutting apparatus of harvesting machines of two members, B and E, and securing them upon the finger bar in the manner as set forth.

Also the recesses *r* and *z* in the inner faces of the fingers, in combination with the supplementary inclined cutters *u* and *v*, projecting above and below the sickle, substantially as set forth.

No. 18,754.—J. M. LONG, PETER BLACK, and ROBERT ALLSTATTER, of Hamilton, Ohio.—*Improvement in Finger Bars for Harvesters*.—Patent dated December 1, 1857.—The nature of this invention consists in constructing the finger bar of two metallic plates, one above and the other below the fingers, to which they are riveted, the upper sheet being set back upon the fingers, and the under notched and bent upward between them, until its edge is flush with their upper surface; so that besides the easy passage of the bar over the stubble, due to the turned up edge and lower plate, the front edge of the upper plate will constitute a rear guide for the cutter bar, which, by this construction, is thrown well back.

The inventors say: We expressly disclaim the formation of finger bars of a single sheet of metal, rounded in front, and with the fingers passing through holes in the said rounded portion, as patented by Moore & Patch, November 25, 1856.

But we *claim* the combination of the wrought metallic plates P P¹ with the reciprocating cutter bar A, cutters C, and square-shanked fingers B, said parts being constructed and arranged in relation to each other for joint operation in the manner shown and described for the purposes set forth.

No. 17,328.—JOHN H. HEYSER and EDWARD M. MOBLEY, of Hagerstown, Md.—*Improvement in Grain and Grass Harvesters*.—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim operating the fork B by means of cams on the driving wheel.

But we *claim* operating the cutter bar O, from the driving wheel A, by means of fork B and arm E, in combination with rocker G and slotted arm H, when said parts are constructed and arranged to operate in relation to each other, as described.

No. 18,229.—JOHN W. BALZLY and WILLIAM HOBSON, of Pana, Ill.—*Improved Cutting Apparatus for Grain and Grass Harvesters*.—Patent dated September 22, 1857.—By this invention the grass or grain, as the sickle vibrates, is prevented from being thrown outward from the fingers by the action of the cutters, and the cutting device is thereby rendered more efficacious.

In the drawings A represents the cutter bar, which is fitted and works in the fingers B. The cutter bar has a reciprocating movement. C represents the cutters, the back ends of which are attached to the cutter bar. The cutters work underneath the caps *a*, which are attached to the screw bolts *b*, to the upper surfaces of the fingers, one to each finger, as seen in the drawings. The upper surfaces of the fingers are recessed, and a steel plate *c* is inserted in each one, the sides of said plates projecting a little beyond the fingers, and having a bend or "basil" on the under surface at each side, so as to form a

cutting edge, as shown at *d d*. The plates *c* may be secured to the fingers by screws.

Claim.—The inventors say: We *claim* the reciprocating teeth *C*, constructed as shown at figure 3, in combination with the stationary cutting plates *c* in the fingers *B*, for the purpose set forth.

No. 17,894.—ADAM R. REESE, of Phillipsburg, N. J.—*Improvement in Guard Fingers for Harvesters.*—Patent dated July 28, 1857.—The engraving represents a vertical cross section through the guard finger. The body *C D* of the guard finger is cast around the steel blades *M*, by inserting said blades within the mould. By having the blades *M* secured in an oblique position within the cutter, they can be sharpened with great facility.

The inventor says: I do not wish to be understood as claiming broadly the use of steel plates or cutting edges, as applied to cast or malleable iron guard fingers, for I am aware that such use is old.

But I *claim* the combination with a cast or malleable iron guard finger of the steel plates or cutting edges *M M*, when the same are united to the finger in the peculiar manner above described, and arranged to operate in relation to each other and to the cutters, as fully shown in figure 5, for the purpose set forth.

No. 18,871.—THOMAS J. STEALY, of Middlebourne, Va.—*Improved mode of supporting Reels for Harvesters.*—Patent dated December 15, 1857.—The engravings and claim will give the reader an idea of the nature of this invention.

Claim.—The reel *W*, supported by hinged arms *X X*, in combination with the notched and adjustable braces *w w*, bar *X¹*, and rake frame *N*, as and for the purposes set forth.

No. 18,736.—C. P. GRONBERG, of Geneva, Ill.—*Improved Rake for Harvesters.*—Patent dated December 1, 1857.—In the engravings *A* represents the platform for the reception of the falling grain as it is cut; at one end of which is erected a standard *B*, on the upper end of which is mounted the pulley *C*, there being a similar pulley *C¹* mounted on the upper end of the driving shaft *a*, which has its bearing in the standard *D*, erected on the other end of the platform; both pulleys *C* and *C¹* are encompassed by an endless chain *E*. Between and to the standards *B D*, is secured a guiding rod *b*, there being another *C* arranged above the other, and secured to standards *Y* and *Y¹*, attached to the standards *B D*, the one *b* below, and the other *c* above the two pulleys *C C¹*.

To one end of the swinging frame *d* is attached a stationary arm *F*, carrying prongs on its lower end; another arm *G*, to which is secured the movable fork *H*, being provided at one end with a sliding collar *e*, which is mounted on the guide rod *b*, and at the other end with a hook or collar *f*, for the purpose of attaching it loosely to the swinging frame *d*.

Claim.—The guide rods *b* and *c*, and swinging frame *d*, carrying the stationary fork *F*, in combination with the levers *l* and *n* and

travelling fork H, the whole being constructed, operated, and arranged in relation to each other in the manner substantially as set forth.

No. 18,256.—ISAAC VAN DOREN, of Somerville, N. J.—*Improvement in Rakes for Harvesters*.—Patent dated September 22, 1857.—The nature of this improvement consists in a peculiar mode of operating the rakes of harvesters.

The relative radii of the sector G will vary somewhat according to circumstances, as the sweep of the rake, the motion of the rod D, or the rock shaft E, but the principle of action will be the same. When worked as shown by the engraving, the wheel H becomes an additional driving or bearing wheel, and connects the shaft of the actual driving wheel by clutch K, by which it is disconnected when the machine is to be turned.

The inventor says: I *claim* operating the rake A, when arranged in relation to the platform as described, by means of the double-gear sector G, in combination with the rod D and rock shaft E, or their equivalent, the whole arranged and operating substantially in the manner set forth.

No. 18,437.—SAMUEL COMFORT, jr., of Morrisville, Pa.—*Improvement in Rakes for Harvesters*.—Patent dated October 20, 1857.—By this improvement, a revolving motion is given to the rake G, in such a manner that the grain is effectually cleared from the platform A, and deposited on the ground during a portion of its revolution; and during the remainder of its revolution, the rake is in such an elevated position as to allow the grain, as it is severed from the cutters, to fall on the platform.

The inventor says: I do not confine myself to any precise mode of imparting a vibrating movement to the lever E. But I *claim* operating the rake by means of the vibrating lever E, ratchet wheel N, spindle F, arm K, spring pawl P, and rods L Q and M, in combination with the segment *q* and plate *i*, when the whole are arranged and combined for joint operation substantially in the manner set forth and for the purposes specified.

No. 16,941.—JESSE URMY, of Wilmington, Del.—*Improved Raking Apparatus for Harvesters*.—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that rakes have been constructed and operated with a rake bar similar to mine driven by a crank, and having its rear end working around a stationary stud, and I do not lay any claim to such an arrangement.

I am also aware that the upper end of the rake bar has been governed by a connecting rod attached to a stationary point or fulcrum, and do not, therefore, wish to be understood as laying claim to any such arrangement.

But I *claim* operating the rear end of the rake A by means of a crank D, when said crank moves with the pin that operates the rake-bar C, in combination with the connecting rod *b* and adjusting holes *v v* and *y y*, the whole being constructed and arranged in the manner and for the purpose set forth.

No. 17,703.—DANIEL C. SMITH, of Tecumseh, Mich.—*Improved Raking Apparatus for Harvesters*.—Patent dated June 30, 1857.—As the machine is drawn along, the rollers D on the driving shaft B strike alternately against the levers E, moving them on their fulcrum a, and the rods F cause the shaft J to oscillate by means of arm G, and this oscillating motion is transmitted to the rake O, which is pivoted at N to shaft I; the rake is thus vibrated over the platform S, and is raised and lowered alternately by friction roller I coming in contact with rod K, depressing said rod and the short end of rake O; and at the next motion the rake drops down on the platform by its own weight. Thus the rake is raised when the grain accumulates on the platform, and, at the end of one motion, drops down and rakes off the grain from said platform.

Claim.—The mode of operating the rake of a grain harvester, by means of the mechanism described.

No. 17,798.—JOHN P. MANNY, of Rockford, Ill.—*Improved Raking Apparatus for Harvesters*.—Patent dated July 14, 1857.—The manner of raising and lowering the platform J of this harvester is described in No. 17,779. The rake Q can be operated either by the attendant on seat I, by means of lever K and rod I, or by power applied to handle O; in both cases the shank N and bar P are moved on the same plane M, turning on the hinged point e, and when the shank N comes in contact with the incline m, the roller n rises on the cam ledge K, and causes the rake to rise during its forward motion over the platform. The teeth h are pivoted to the rake head Q; and when the rake rakes off the grain, the teeth h are forced into the position represented in full lines by the peculiar shape of the platform. On the rake being elevated, it assumes the position represented in dotted lines.

Claim.—In combination with a contracting trough-shaped platform, a self-contracting and elongating rake, substantially in the manner and for the purpose described.

Also, raising and lowering a rake operated as set forth, to cause it to preserve its relative working position with regard to the platform, as said platform is raised or lowered, by means substantially such as described.

No. 18,009.—ISRAEL DODENHOFF, of Bloomington, Illinois.—*Improved Raking Apparatus for Harvesters*.—Patent dated August 18, 1857.—When the machine is put in operation, the rake H, while passing on the front part of the platform, is kept in proper position by the curved rails e to rake off the grain; but on its arrival between the standards J K, it forces back the gate I to the discharging place, as represented in dotted lines, and discharges the grain in a compact bundle on the ground.

Claim.—The rake H, in combination with the platform A and stationary and elastic guides, the whole being constructed and operated substantially as described.

Also gate I, in combination with a rake H, travelling in a horizontal endless track, the whole being constructed and operated in the manner substantially as and for the purposes set forth.

No. 17,025.—ISAAC H. CONKLIN, of Rockford, Illinois.—*Improvements for Raking Attachments for Harvesters*.—Patent dated April 14, 1857.—As the machine is drawn along, rotary motion is given to the rod J in consequence of the wheel F gearing with pinion F on shaft G, and the pinion H on said shaft gearing into wheel I. As the rake teeth *g* sweep over the platform A, the cut grain is raked into the hopper *j*, and at this point the pin *n* passes over and turns the outer pinion *h* on shaft K, and the hopper *j* is tilted as shown in dotted lines, the grain that was in it falling in a gavel upon the ground. As the rod J rotates, the pin *n* strikes the pinion *h*, and throws up hopper *j* to its original position.

Claim.—Operating the hopper *j*, attached to the shaft K, by means of the pin *n* on the plate *m*, in combination with the pinions *h h* on the shaft K, when the said parts are constructed and arranged in relation to the platform A in the manner and for the purpose set forth.

No. 17,045.—DANIEL W. LAFETRA AND HENRY A. LAFETRA, of Eatontown, New Jersey.—*Improved Raking Attachment for Harvesters*.—Patent dated April 14, 1857.—As the machine is drawn along, the two pinions *k'* and *l* will be kept in gear in consequence of roller E bearing upon the ground, and the cylinder C will be rotated by the cranks *p q* and connecting rods *r*, and the rake B will have a reciprocating motion given it by the spiral grooves *i j j*, the teeth *a'* of the rake being elevated as they reach the outer end of the platform by the spring catch *s*, which acts upon the head *b* at that point and turns it, so that the cut grain will be raked off the platform *a*, the rake teeth being turned down in a horizontal position and below the upper surface of the platform as it moves back to the outer end of the platform. When the machine is backed the rake B is not actuated, as the pinion *k* will be thrown out of gear with the pinion *l*.

The inventors say: We are aware that reciprocating rakes, provided with teeth, fitted in a slotted platform, have been previously used, and various devices have been employed for operating them. We therefore do not claim a reciprocating rake, irrespective of the means employed for operating it.

But we *claim* operating or giving a reciprocating motion to the rake B by means of the spirally grooved cylinder C, in combination with the spirally grooved collar K, constructed and arranged substantially as shown and described.

Also rotating the cylinder *c*, by means of the self-adjusting wheel or roller E and vibrating shaft F, when the same are constructed and arranged in the manner and for the purpose substantially as described.

No. 17,690.—JOHN MCINTOSH, of Geneva, Illinois.—*Improved Raking Attachment for Harvesters*.—Patent dated June 30, 1857.—As the machine is drawn along, the grain is deposited on the travelling apron B, and the plate C is drawn in and out in consequence of the cord *j* being wound around the hub *n*, and said cord is cast off from the hub at every revolution of the hub by means of the inclined side *o* on the projection *m*. When the cord *j* is cast off from the hub *n*, the plate C is forced back underneath the apron B by spring F, and the grain on said plate is deposited on the ground.

The inventor says: I am aware that endless aprons and sliding plates have been frequently employed on harvesters for the purpose of discharging the cut grain from the machine, and I therefore do not claim the employment or use of such separately or in themselves considered.

But I *claim* the peculiar method described for withdrawing and releasing the sliding plate C, when the same is used in combination with the endless belt B, in the manner and for the purpose set forth.

No. 18,096.—STEPHEN R. HUNTER, of Cortlandt, New York.—*Improved Raking Device for Harvesters*.—Patent dated September 1, 1857.—When the gate J is in a horizontal position, as represented in dotted lines, the cut grain will pass over the plate F behind the gate J; and when a sufficient quantity has passed behind the gate J, said gate will assume a vertical position and cut off the passage of the cut grain, the gate N rising simultaneously, and allowing the cut grain to remain in a gavel on the ground.

Claim.—The rod K, or its equivalent, and two gates J N, applied to the machine as shown, the gates being operated from the wheel E, by means of the cam D¹, crank shaft H, rod L, and arm M, arranged substantially as shown, for the purpose set forth.

No. 17,749.—CHARLES D. ROGERS, of Utica, New York.—*Improved Scroll Wheel for Harvesters*.—Patent dated July 7, 1857.—By constructing the scroll wheel as illustrated by the claim and engravings, the use of cores becomes unnecessary, lessening the expense of casting, while the chilling process may be readily applied.

The inventor says: I do not claim broadly the construction of scroll wheels in two separate parts.

But I *claim* constructing scroll wheels of harvesters in two separate parts, when both the adjustable portions D and main rim A are constructed and arranged in the peculiar manner set forth.

No. 17,685.—SALEM T. LAMB, of New Washington, Indiana.—*Improvement in Self-acting Rakes for Harvesters*.—Patent dated June 30, 1857.—In the engraving G represents the driving shaft of the harvester; as said shaft is rotated, the crank I is also rotated, causing the end of the beam M, which is pivoted to said crank, to rotate with it; and as the beam M is pivoted at *k* to shaft L, and shaft L can turn freely in its bearings, it follows that the slotted end *g* of the beam describes also a circle. By this movement, and the combination of spring *k*, the rake N of the harvester is operated in such a manner that it will be raised, as represented in fig. 2, when it is moving towards the front of the platform, and will be depressed to said platform when moving to the rear, and raking off the grain, as represented in fig. 1.

Claims.—In combination with a rake having the motions described, the gyratory beam M, and the rock shaft L, when the rake is attached to said rock shaft as shown, and the whole operates in the manner set forth.

Also, in combination with a rake operating as above described, the

slotted guide *g*, for regulating or governing its motions, when combined with the beam *M* and shaft *L*, as set forth.

Also, in connexion with a rake having the motions described, the combined use of the spring *K* for holding it to its work, and the set screw *m* for regulating the extent of descent of said rake, substantially as set forth.

No. 18,462.—SAMUEL C. LONGSHORE, of Lahaska, Pa.—*Improved Swathing Apparatus for Harvesters*.—Patent dated October 20, 1857.—By this invention as the grain or grass is severed by the cutters of the harvester it falls into the endless apron *D*, which conveys it toward the raker *E*. The ends of the teeth *e* *e*¹ *e*² catch the grain or grass just as it is about being carried over the roller by the endless apron, the teeth of the raker conveying it in a radiating direction along the surface of the plate *I*, and allowing it to fall to the ground down the abrupt inclination of the latter, the guard *M* preventing the tendency to carry up the stalks of grain any higher than necessary. As the stalks of grain or grass are carried over the plate *I*, they are confined to their proper position by means of the curved projection *k*.

Claim.—The inventor says: I do not desire to claim exclusively the depositing of the severed grain or grass on the ground in a line with the cutters, or the employment of a cone-shaped rake for effecting that purpose.

But I *claim* the angular rotating rake in combination with the endless apron, and the plate *I* with its recesses *i* and projection *k*, when the whole is arranged and constructed substantially in the manner and for the purpose set forth.

No. 16,789.—GEORGE R. CRANE, of Caldwell, N. J.—*Improvement in Machines for Harvesting Grain*.—Patent dated March 10, 1857.

Claim.—Operating the bars *M N*, to which the rake teeth *a* are attached, from left to right by means of the straps *O O*, roller *P*, cord *f*, and spring *Q*, when the same are constructed and arranged in relation to each other, within the divider or shield *X*, in the manner and for the purpose set forth.

No. 16,658.—WILLIAM SCHNEBLY and THOMAS SCHNEBLY, of Hackensack, N. J.—*Improvement in Machinery for Harvesting Grain and Grass*.—Patent dated February 17, 1857.

Claim.—The thin trapezoidal-shaped finger or guard *R*, in combination with the cutters *E S*, when said finger is constructed with an open area or space *m m*, conforming to the same finger, and with recesses *m m* in front and rear to support and guide the cutters near the centre of the finger or guide substantially in the manner described.

No. 17,438.—JOHN B. McCORMICK, of Versailles, Ky.—*Improvement in Machines for Harvesting Hemp*.—Patent dated June 2, 1857.—The driver is seated upon seat *B*, and an attendant is seated upon seat *J*; as the machine is drawn along the hemp is cut by sickle *B*, the reel *F* striking the upper part of the hemp and throwing it over upon rods *L* and platform *C*, the butts resting on the platform *C* and the

upper ends on rods L. When a requisite quantity of hemp has fallen upon the platform and rods, the attendant withdraws the rods L, and the hemp falls to the ground; the rods L are then replaced upon bars K, ready to receive a new supply of hemp.

Claim.—The combination of the adjustable bar I and seat J with the bars K K, rods Q Q, moveable bar L, and narrow platform G, when said parts are arranged in relation to each other, to facilitate the harvesting of hemp, as described.

No. 18,628.—JOHN C. COX and REUBEN NEWTON, of Greenville, N. C.—*Improved Harvesting Machine.*—Patent dated November 17, 1857.—The object of this invention is to gather grain from the heads of standing straw in the field, the straw being left in an uncut state. The invention consists of a comb G, formed of concave teeth *e*, attached to the front end of a mounted seed box A, and used in connexion with revolving teeth I.

The inventors say: We do not claim separately either of the parts described.

But we *claim* the comb G, in combination with the rotating teeth *i* and roller *f*, constructed and arranged substantially as and for the purpose set forth.

No. 16,618.—WALTER A. WOOD, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—The raker's seat H can be swung around point *c*, so as to adapt the machine to the quality of the grain or to the ease of the raker.

Claim.—Making the raker's seat or stand adjustable in the arc of a circle on the rear part of the frame, substantially in the manner and for the purpose set forth.

No. 16,619.—WALTER A. WOOD, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—Patent dated February 10, 1857.—The track clearer E may have through its spring F a vertical motion to pass over obstructions, and at the same time possesses the necessary rigidity horizontally to resist the pressure of the grass against it to move it out of the track of the machine on its return swath. (See engraving 16,619, and also engraving 16,618.)

Claim.—In combination with the finger bar A and shoe C, a track clearer E, hung to said bar by a spring F, and playing vertically between, but resisted laterally by the lugs *a a* on said shoe, when said parts are constructed and arranged in relation to each other substantially as set forth.

No. 16,620.—WALTER A. WOOD, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—Patent dated February 10, 1857.—By drawing up the clutch lever U, the cam planes *b'* move the shaft E to the right, thus throwing wheel P out of gear with pinion Q; a contrary or downward motion brings them into gear again through the other cam planes *b*.

Claim.—Connecting and disconnecting the gears P Q by a clutch

lever U, with its cam planes and handle extending up through the support to a convenient position for the operator, and when made and operated in the manner and for the purpose set forth.

No. 16,873.—GEORGE ESTERLY, of Heart Prairie, Wis.—*Improvement in Harvesting-Machines*.—Patent dated March 24, 1857.—This invention relates to the construction of the frame of a harvesting-machine, with a view of its being better balanced and adjusted on its supports, and for preventing side draught. The claim and engravings further explain the nature of this invention.

The inventor says: I *claim*, 1st. Connecting the leading truck to the main frame by means of a rigid reach or secondary frame H I K, when said reach or frame is pivoted to the rear end of the main frame, and united to the truck by a king bolt, and arranged in relation to the driving-wheel, main frame, and platform, substantially as set forth.

I also *claim* the forked lever P, lifting piece N, and spring dogs *g*, combined and operating together for lowering the sickle beam, as set forth.

No. 17,134.—J. F. BARRETT, of North Granville, N. Y.—*Improvement in Harvesting-Machines*.—Patent dated April 28, 1857.—As the machine is drawn along, main wheel B drives shaft E, the cam wheel G of which operates bar H, by striking against the projection *k*, and a reciprocating motion is thus imparted to the knife N. The slides Q, which are attached to the knife N, move in the fingers P, and carry the knife N; and the pivots *s* of knives R R¹, by reason of the sudden reversals of the direction of their motions, and by the projections *n v w* operating against the stops *z*, and the knives R and R¹ are thus caused to vibrate in arcs of circles toward and from the knife N, while their pivots *s* move with said knife.

Claim.—Constructing the combination of the straight forward and back moving knife N, or its equivalent, with the oscillating or swivelling knives R R¹, when constructed and operating substantially as described.

No. 17,678.—JOHN K. HARRIS, of Allensville, Ind.—*Improvement in Harvesting-Machines*.—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Imparting to the cutter-bar of harvesting-machines a uniform reciprocating motion, by means of the duplex drive-wheel K K¹, when used in combination with the rocking pinion L; said wheel and pinion being geared by means of alternate and oblique sets of cogs *k k¹ l l¹*, in the manner set forth.

No. 17,088.—JONATHAN P. GREEN and ISRAEL DODENHOFF, of Bloomington, Ill.—*Improvement in Automatic Rakes for Harvesting-Machines*.—Patent dated April 21, 1857.—Rotary motion being imparted to pulleys *b* and *b¹*, the belt C, to which the rakes D are attached,

moves over said pulleys; the rakes, when over the platform A, are pressed down on said platform by means of guide *h*, while they are raised to a vertical position by guide *k*, when they pass to the rear of the platform.

Claim.—The mode described of attaching rakes to endless belts or chains, and of properly guiding the same, whereby lateral and vertical deflection of the band is prevented in operating the rakes; that is to say, hinging the rakes to the belt C, by means of jaws *c* and projecting lips *d*, when combined with guide-pins *f*, working in grooves to prevent lateral deflection, while a guide-bar *h* keeps the rake down to the platform in raking off the grain, all as set forth.

No. 16,393.—ROBERT J. MORRISON, of Richmond, Va.—*Improvement in the Cutting Apparatus of Harvesting-Machines.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—As an improvement on my patent of August 14, 1855, the peculiar form of the lid which overlies the cutters, namely, a lozenge or spear-shaped point and rhomboidal base, for the purpose of giving an oblique direction to the joints between said lids, to prevent the grass, gum, or other material from clogging said joint and checking the efficiency of the lids, substantially as described.

No. 18,093.—JAMES HAVILAND, of Milton, N. Y.—*Improved method of operating the Cutters of Harvesting-Machines.*—Patent dated September 1, 1857.—As the wheel A revolves, the teeth *e* cause shaft B to turn by acting upon its spiral grooves, and the cutter-bar is vibrated by the intermediate eccentric D and pitman *f*.

Claim.—Imparting the requisite movements to the cutter-blade of a harvesting-machine by means of the spirally grooved intermediate shaft B, and the series of hemispherical or oval-headed teeth *e e*, projecting from the face of the main bearing wheel A, and operating upon the said intermediate shaft, substantially as set forth.

No. 17,367.—RALPH EMERSON, Jr., of Rockford, Ill.—*Improved Tongue and Caster Plate for Harvesting-Machines.*—Patent dated May 26, 1857.—The tongue E can be attached to either side of the plate A, being held between the flanges *b*, and secured to the plate by screw bolts. This arrangement affords the means of bringing the tongue nearer or carrying it further from the standing grain.

The inventor says: I do not claim merely giving a lateral adjustment to the tongue of harvesting-machines, as this has been done in various ways. But I *claim* the tongue and caster plate, constructed in the manner and for the purpose described.

No. 16,726.—JAMES H. FRAMPTON, of Hopewell, O.—*Improvement in Machines for Harvesting Standing Corn.*—Patent dated March 3, 1857.—The arms *c* serve to throw the cut stalks into the body H. The driver walks behind the bars *m m*, and when the body is filled with stalks, he draws back the body by grasping the cross-piece *z*; the pin *k*, which is fitted in the slot *l* in the plate *i*, serving as a guide to the

body. When the body is drawn fully back (see broken lines in figure 1), the driver turns the body at right angles to its former position (see broken lines in figure 3), the wheels *n n* of course turning with the body. The body is then shoved towards one side of the machine and is then tilted (see broken lines in figure 2), when the stalks will fall from the body, and the chains *s s* will actuate the rods *o o*, causing the arms *p p* to approach each other, and gripe and depress the upper ends of the stalks, thereby causing the lower ends to spread out so as to form a proper base to keep them in a vertical position. The driver then replaces the body in its original position.

Claim.—The body *H*, so arranged that it may be operated to discharge the stalks, as described, in combination with the rods *O O*, placed in said body and provided with curved ends or gripping arms *p p*, as shown, for the purpose specified.

No. 16,462.—SAMUEL BRADBURY, of Griggsville, Ill.—*Improvement in Machines for Trimming Hedges*.—Patent dated January 27, 1857.—This machine is drawn along the side of the hedge, and the vertical cutters *B*, constructed similarly to the cutting apparatus of harvesting machines, are operated by means of gearing *H* and *Q*, shaft *R*, crank *T*, and rod *V*, trimming the side of the hedge, while the cutters *M* on the elevated beam *A*, cut the top of the hedge.

Claim.—The arrangement of the adjustable cutters *M* and vertical cutters *B B*, operated in the manner and for the purposes set forth.

No. 17,764.—WILLIAM WIMMER, of Billingsville, Ind.—*Improvement in Machines for Trimming Hedges*.—Patent dated July 7, 1857.—The position of the horizontal cutting apparatus for trimming the top of the hedge can be adjusted by turning the cranks *p* of the screw shafts, and the position of the vertical cutting apparatus can be adjusted by operating the nut on screw *i*.

Claim.—The duplex arrangement of shears *s g*, substantially as described, both sets being actuated from the same driving-wheel, and being adapted to trim simultaneously the top and one side of the hedge to any desired uniformity, height, and pitch.

No. 18,997.—H. N. THROOP, of Pultneyville, N. Y.—*Improvement in Governor for Steam-Engines*.—Patent dated December 29, 1857.—This invention consists in a wheel with a series of connected segments *D*, so applied as to be capable of moving from and towards its centre, or to form an expanding and contracting rim, and combined with a spring *K*, or springs acting in opposition to the centrifugal force generated in said segments or expanding rim by the rotation of the wheel, so that the segments or rim will have a tendency to move from or towards the axis, as the velocity of the wheel increases or diminishes with the increasing or diminishing velocity of the motor, and thus will act upon the regulator to diminish or increase the supply of steam.

Claim.—The combination *A*, or their equivalents, the expanding

segments and links constituting the expanding rim, and the springs to operate as described.

No. 17,848.—SOLOMON SHETTER, of Allegheny, Pa.—*Improvement in Garden Hoes*.—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the mere form of the tines or prongs on the top of the hoe blade; that is to say, said tines being formed concave on the back, and convex on the face.

But I *claim* cutting and forming hoe blades out of sheet iron or steel, with side edges A and prongs C, as described, and for the purpose set forth.

No. 16,764.—JOSEPH WEBER, of Braysville, Ind.—*Improvement in Machines for Hulling and Scouring Wheat, &c.*—Patent dated March 3, 1857.

The inventor says: I do not claim a polygonal surfaced drum or cleaning chamber having a roughened series of projections or a roughened surface, for I am aware such have been used for many purposes.

I *claim*, first, the polygonal chamber A, when made substantially in the manner described, so that the grain will be turned over and over during its descent through the chamber, and be rubbed without being broken.

Second. The curved and notched arms *a a*, in combination with the polygonal chamber A, when constructed and used for the purpose described.

Third. The combination and arrangement of the polygonal chamber A, curved and notched arms *a a*, and the smooth triangular arms *c c*, as and for the purposes described.

No. 16,509.—WILLIAM WILBER, New York, N. Y.—*Improvement in Machines for Hulling and Separating Cotton Seeds*.—Patent dated January 27, 1857.—The lower end of the sieve box M rests upon the pins O O, arranged in a wheel N. A third pin P is embraced by two studs Q Q attached to the sieve box M, which arrangement, in combination with the eccentric L, causes the sieve box to vibrate vertically and longitudinally.

Claim.—First, in combination with the runner and concave, a blast across the top of said runner, to carry the material to the spout or trunk as soon as it rises to the top of the runner, as set forth.

I also claim, in combination with the runner and concave, the trunk W, with its teeth or grooves for facilitating the separation of the hulls and kernels, as set forth.

I also claim hanging the sieve box by an eccentric to the shaft of the runner and by the plate N and pins O O P to the frame, to give said sieve box its compound, vertical, horizontal, and end movement, as set forth.

I also claim the plates *e f*, with their dress arranged at the feeding-in point of the machine, and forming a portion of the breast of the machine, as set forth.

No. 17,961.—WILLIAM R. FEE, of Cincinnati, Ohio.—*Improvement in Machines for Hulling Cotton Seed*.—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the device shown in the mill of Walker, patented in 1855, or any other form of mill dress heretofore known.

But I *claim* a series of cutting edges *e i*, with deep intervening furrows *b h*, for the purpose of hulling cotton-seed by a culling action, which renders both the screening process and the expression of the oil easy and complete, as set forth.

No. 16,469.—LEWIS F. CURRIER, of Portland, Maine.—*Improvement in Machines for Hulling Rice*.—Patent dated January 27, 1857.—While rolling around in the mass of rice in the endless trough A, each wheel B forces the kernels downward, and causes them to pass upwards between the sides of the wheel and those of the trough; and as the wheel leaves them the peculiar shape of the sides causes them to fall back into the path of the wheel, so that it may act again upon them in a similar manner when it next comes around into that part of the trough where they may be situated.

The inventor says: I do not claim the use of a wheel and trough either for pressing or mixing substances, as this is a common application of such devices in the manufacture of powder and in crushing ores, as well as pulverizing or mixing various materials; and although I believe I am the first person who used wheels and a trough for the process of skinning and pearling rice, I presume I cannot claim the same, so far as a new use of them alone is concerned.

I *claim* the improvement in the construction and application of the wheel or wheels to the endless trough, made substantially as described, whereby advantages in skinning rice are gained as specified; such improvement consisting in the disked wheels, applied or arranged in such a trough, essentially as set forth.

No. 18,332.—HARLAN P. GERRISH, of Sandoval, Illinois.—*Improved Corn-Husker*.—Patent dated October 6, 1857.—A in the drawings represents the frame of the machine; B the husking cylinder; C the clearing cylinder. At one end of the machine, and contiguous to the husking cylinder, is placed a feeding cylinder D, fixed upon a shaft *a*, and made to revolve in suitable bearings *b b*. Upon said cylinder, and at suitable distances apart, are arranged four or any other proper number of long troughs or boxes *E E¹ E² E³*, said boxes being inserted into the sides of the cylinder, and bearing or resting upon springs *k* (extending from the shaft *a*, up to and against the bottoms of the troughs), as seen in the drawings. Stops *l l* prevent the trough from falling out of the cylinder.

The ears of corn to be husked are placed successively upon or into the husking troughs as the feeding cylinder rotates, and in the proper position for the knives to cut the stalk off just in rear of where the husks are attached to said stalk.

Claim.—The inventor says: I claim the feeding cylinder D, or its

equivalent, made with a series of spring troughs $E E^1 E^2 E^3$, for holding the blades of corn successively to the action of the knife and husking cylinder, as set forth.

I also claim causing said cylinder to stop each time the ear is brought against or to the action of the husking cylinder, in manner and for the purpose as described.

No. 18,358.—WILLIAM H. SMITH, of Newport, R. I.—*Improved Corn-Husker*.—Patent dated October 6, 1857.—This improvement can be best described by showing how the machine operates. Motion is given to the driving-shaft L, in any proper manner, and the attendant takes the stalks and lays them transversely on the aprons D E in such a way that the ears will be upon the central apron D. These aprons move in the direction of the arrow 1, in figure 1; and as the ears pass underneath the apron H, they are held firmly down on the apron D, while the saws cut the ears from the stalks. The stalks, when cut from the ears, fall down at each side of the frame A; and the ears, as they pass off the inner end of the apron D, fall between the upper ends of the aprons M M. These aprons move in opposite directions, as indicated by the arrows, in figure 1; and the husks are stripped off from the ears as they pass down between the aprons by the teeth d , the requisite pressure of the teeth d against the ears being produced by the pressure-rollers P P. The ears, as they pass from between the aprons M, fall upon the apron Q, and are conveyed by it to one side of the frame B. The brush cylinders O O strip the husks from the aprons M, and keep their teeth d always clean and in perfect order.

Claim.—The inventor says: I am aware that machines have been devised in which one toothed endless apron and brush cylinder were used, and a patent was formerly granted to me for an arrangement of such devices in connexion with a toothed disk.

I am also aware that circular saws have been used for sawing off the butts from the ears; I do not claim, therefore, separately, the employment or use of saws.

Neither do I claim the employment or use of endless aprons, irrespective of the arrangement shown.

But I *claim* the combination of the two toothed aprons M M, provided with pressure P, with the brush cylinders O O¹, arranged and operating conjointly as shown, for the purpose specified.

No. 18,447.—ALDEN GRAHAM, of Roxbury, Mass.—*Improved Corn-Husker*.—Patent dated October 20, 1857.—In using this improved machine, the knife C, as it detaches the butt from the ear, also forces it upon the fork l ; and as the knife descends, its edges $f f$ force the two arms $i j$ apart, the fork causing the butt with husk c attached outward to one side of the machine, and the ear being forced outward at the opposite side, the cutter K slitting the husks on the ear so that they may be readily drawn from it by the fork l . When the two arms are fully distended by the knife, the ear, stripped of its husk, will fall off the bed F.

The inventor says: I *claim* the vertical reciprocating knife C, in com-

bination with the slitting cutter *k*, stripping fork *l*, and slotted bed *F*, arranged and operated substantially as and for the purpose set forth.

No. 18,571.—JOSEPH CAWTHRA, of Rochester, N. Y.—*Improved Corn-Husker*.—Patent dated November 10, 1857.—*B* is a driving-wheel, which, by cogs meshing into the cogs of *c*, propels a shaft *d* running at right angles with the driving-wheel; a belt from a pulley affixed to the inside part of the axle of the driving-wheel propels the wheel *F*; *h* is a wheel which drives the wheel *I*, into the extended cogs of which it meshes, and has a long axle, around which, as one centre, the belt *P* revolves. The wheel *I* also meshes into the wheel *J*, and wheels *I* and *J* are affixed to the axle of the rollers *l* and *k*; *m* and *n* are elastic or spiral spring dishes (the spring being behind the dish), by which the pressure is adjusted to the different dimensions of ears.

The fan consists of curved arms, with teeth upon cross plates at the perimeter, the curved arms giving the plates and teeth a curved form, and fitting them to take the husks and strip the husks lengthwise off the ear, and from the top to the butt.

Claim.—The grooved rollers *l k*, saw wheel 4, and endless apron *p*, in combination with the husker 2, grating 3, and curved tooth fan *l*; the whole being constructed as set forth.

No. 18,584.—SAMUEL A. GOULD, of Seneca Falls, N. Y.—*Improved Corn-Husker*.—Patent dated November 10, 1857.—In operating this machine, an ear of unhusked corn, attached to the stalk or otherwise, is held against the guide *C*, and the butt brought on to the point of the knife *D*, while the ear toward the small end rests on the arm *E* of the trip-lever *E*; a stroke, lever *B*, performed by the hand or foot by means of a treadle, brings the slotted portion of the lever *B* down upon the butt, driving the knife through it, which partly separates the knife from the butt, while at the same time the lever *B*, striking the end of the arm *K* of the trip-lever *E*, elevates the other arm and breaks the ear loose from its husk, leaving the husk attached to the stalk.

Claim.—The trip-lever *E*, in combination with the lancet-shaped knife *D*, the guide *C*, and the slotted lever *B*; the whole being constructed and operating as described.

No. 18,658.—HERMAN A. DOSTER, of Bethlehem, Pa., assignor to Himself and SMITH A. SKINNER, of Lowell, Mass.—*Improved Corn-Husker*.—Patent dated November 17, 1857.—This invention consists in the employment or use of two rollers, placed one above the other in the same plane, the rollers *B C* being armed with teeth *e*, and grooved circumferentially, whereby the ears of corn, when placed in the angle or "bite" formed by the contact of the two rollers, will have their husks stripped from them in a rapid manner, the husk being drawn through or between the rollers; the ears, when fully stripped or denuded of their husks, falling directly down from the bite or angle of the rollers without passing between them.

Claim.—The inventor says: I do not claim the employment or use of rollers for husking corn, irrespective of the arrangement of the teeth and

grooves, as shown, for rollers have been previously used for the same purpose.

But I *claim* the rollers B C, when provided with the grooves *d* and teeth *e*, arranged substantially as and for the purpose set forth.

No. 18,662.—SMITH A. SKINNER, of Lawrence, Mass., assignor to Himself and HERMAN A. DOSTER, of Bethlehem, Pa.—*Improved Corn-Husker*.—Patent dated November 17, 1857.—The nature of this invention consists in the arrangement of teeth and grooves of two rollers, whereby the husk will not only be stripped from the ear of corn, but the ear put in rotation so as to accomplish the stripping operation entirely around it.

The claim and engravings further show the nature of this invention. The inventor says: I am aware that my machine contains some mechanical devices incident to other machines for husking corn—that is, it contains a serrated cutter, and a means of stripping the husk from the ear; I therefore do not claim the employment of a saw or cutter in connexion with an endless carrier to hold the ear of corn, and so present it to the said saw as to enable the latter to separate the stalk and husks from the ear.

Nor do I claim the employment of an inclined grated spout or gird, and a toothed cylinder having its teeth operating through the spaces between the bars of the spout, and so as to seize the husks and separate them from the ear, while the latter, by the action of gravity, passes down the spout.

I am also aware that, for separating the husk from the ear of corn, two rollers have been employed, each of which has been constructed with teeth and grooves arranged circumferentially on it, and so that the teeth of one roller worked into the grooves of the other, while the teeth of the latter work into the grooves of the former. In this case, however, the ear of corn, being seized on opposite sides by the teeth of both rollers, could not easily revolve so as to be entirely stripped of its husk, the conjoint operation of the teeth of the two rollers operating also to cause the teeth to penetrate the husks, and tear the kernels of corn out of the ears.

I therefore do not claim fluted or corrugated rollers for husking corn, nor the employment and use of rollers, irrespective of my improved arrangement of teeth and grooves; nor do I claim making each roller with teeth and grooves.

But I *claim* the arrangement of the teeth in one roller, in combination with the arrangement of the grooves entirely in the other roller, the same serving to effect the rotation of the ear of corn, as well as the removal of the husk and its presentation to the bite of the rollers, as specified.

No. 18,644.—CHARLES N. LEWIS, of Seneca Falls, N. Y.—*Improved Corn-Husker*.—Patent dated November 17, 1857.—This invention consists of a bed-piece A, to which is hinged a cast iron lever B, to the head of which is attached a chisel-pointed steel blade C for severing the ear from the butt. To the side of the head is hinged a wedge-pointed dog D, with an elbow lever E. Directly underneath the blade

is a concave bed G, for receiving the corn to be husked, by the side of which rises a tripping post H, having a bent head I for operating the dog D, by means of the elbow lever E. The concave and bed-piece are mortised through at J, to allow the blade to descend an inch or thereabouts below the surface of the bed, and a slot K extends from the mortise to the end of the concave.

Claim—The combination of the operating lever B, with the wedge-pointed dog D, lever E, tripping post H, blade C, concave G, and slot K; the whole arranged and operating in the manner and for the purpose set forth.

No. 17,269.—E. F. FRENCH, of Franklin, Vt.—*Improvement in Corn-Huskers*.—Patent dated May 12, 1857.—The corn is placed between the two aprons D, which form a hopper, and, moving in the direction as indicated by the arrows, have a tendency to loosen the husks on the ears. The ears pass down upon the apron E, and are conveyed to rollers G, which grasp the husks and strip them from the ears, the husks passing between the rollers, and the corn passing over them.

Claim.—The combination of the endless aprons D D E, and rollers G G, two or more, covered with India rubber or other elastic material; the above parts being arranged and operating as shown and described for the purpose specified.

No. 18,331.—AMMI M. GEORGE, of Nashua, N. H.—*Improvement in Corn-Huskers*.—Patent dated October 6, 1857.—The operation of this machine is as follows: By turning crank M, a rotary motion is imparted to the shaft N, and roller S, and cogged wheel *u*; the motion of roller S is transmitted to roller *t* by means of a belt or rope and to shaft P, and a rotary motion is given thus to roller C, and a travelling motion to apron B. The attendant now places the ears of corn each between two slats *a*, and the ears are thus carried forward. The disk wheel E, has a rapid revolving motion imparted to it by means of the cog-wheel *u* and *v*; and when the ears arrive opposite the groove *d* in arm *g*, the butt end of each ear is cut off by the action of the knives *b*. During the process of cutting, the butt end rests on the arm, and the blade separates the stalk from the ear and passes through slot *d*, while the ear passes on with belt B, after which the husked ear is discharged at the rear of the machine.

The inventor says he *claims* the combination of the revolving cutter wheel E, with the travelling endless apron B, slotted arm *g*, and the vibrating husking board L, arranged and operating substantially in the manner and for the purpose described.

No. 18,396.—JOHN B. HEICH, of Cincinnati, Ohio.—*Corn-Husker*.—Patent dated October 13, 1857.—In working this machine, the operator stands in front of the driving-wheel Q, and, as he turns the crank R, gives motion to all parts of the machine. As the crank turns, motion is given to the roller E by means of the pinion O, and the corn, guided by the edge of the inclined feeder K, which is on line with the outer edge of roller E, rolls into the flutes of the roller and is held fast by roller F, which is rotated by the movement of the under roller,

impelled forward by the ear, and the butt is gradually cut off, the knife G revolving quicker than the ear. The butt, in consequence of the angle at which the knife is placed, is thrown off in a tangent, and the ear falls down the inclined feeder K into the grating L, when the spikes, acting through the grating L, tear the husk off and pass it through the spikes on the under side of the convex frame S S', when, being separated from the spikes by means of the rake V, it drops to the floor, and the husk falls from the grating into a basket or other receptacle.

Claim.—The inventor claims: First. The feeding rollers E and F, in combination with the inclined feeder K and rotating knife G, when said parts are constructed and arranged in relation to each other, in the manner and for the purposes set forth.

Second. The convex frame S S' and grating L, in combination with the inclined tapering cylinders B B', provided with teeth as described, and rake V; the whole constructed and arranged for joint operation as and for the purposes specified.

No. 18,385.—ROBERT BRYSON, of Schenectady, New York.—*Improvement in Corn-Huskers.*—Patent dated October 13, 1857.—In this improvement, to the front sides of the heads *e* a bar G is attached. This bar has two openings *k k* made transversely through it. These openings are in conical form. In the back side of the bar G a steel plate *l* is fitted, and this plate has openings *m m* made through it, the edges of the openings at one or both sides being brought to a cutting edge. The outer end of the plate *l* is attached to one end of the lever H, which has its fulcrum at *n*. The opposite end of this lever is fitted into a cam *p*, which is placed on one end of the inner roller *a* of the apron B.

The inventor says: I do not claim the endless aprons B C and corrugated rollers D D' E E', for they, in connexion with a guard, have been previously used, and were formerly patented by me.

But I *claim* the reciprocating plate *l* placed in the bar G, and having apertures *m m* made through it, and provided with cutting edges, substantially as shown, for the purpose of cutting the butts from the ears; the bar G having apertures K made through it, and the bar *t* operated in any proper manner.

No. 18,433.—GEORGE K. BROWN, of Moultonborough, New Hampshire.—*Improvement in Corn-Huskers.*—Patent dated October 20, 1857.—The claim and engraving show the nature of this improvement.

Claim.—The inventor says: I *claim* the rotating drum D, provided with holding sockets L, gauge plates I, and clearing teeth *h*, and acting in combination with the stationary cutting knife H and elastic ribs E, provided with stripping teeth *m*, with or without brushes *n* on their under sides, in the manner and for the purpose specified.

No. 18,922.—DAVID M. MEFFORD, of Perrysburgh, Ohio.—*Improvement in Corn-Huskers.*—Patent dated December 22, 1857.—A is a large cylinder, or drum, journalized horizontally. Encircling this drum, and near its left end, is a groove N adapted to receive the "root husks" of the ear. The periphery of the drum, to the right

of the groove N, is occupied by equidistant longitudinal troughs M adapted to receive the unhusked ears, bear them forward to the slicing knife D, and discharge them into the chute I, as the drum continues to rotate. o are notches on the periphery of the drum, to the left of the groove N, arranged in a line with the trough M, but sufficiently shallow to adapt them to receive the stalk.

The nature of this invention consists in preparing the ear for the action of the husking rollers, and in the combination of a hinged and roughened apron, with husking rollers of peculiar construction, adapted to completely strip the husks from the ear, whether their roots have been severed or not.

The inventor says: I *claim*, 1st. The feed drum A, provided with ear pockets M N O, when used in the described combination with the knife D and husking peg E, for the purposes set forth.

2d. The husking rollers F G, constructed as described, in combination with the hinged and roughened apron H, in the manner and for the purposes set forth.

No. 16,727.—JAMES FULTON, of Louisville, Ky.—*Improvement in Chronometer Escapements*.—Patent dated March 3, 1857.—M L R represents part of the escape wheel; A the roller (partially broken away to show the lifting pallet B below it); N the pivots of the staff; P E D a lever on pivots at E, with the detent pallet placed on its upper side at P; c is a banking attached to the plate for the lever to stop against, so as to limit the depth of the locking; F D G is a small lever or click, with its pivots playing in the lever at D, and is held against a banking attached to the lever at H, by the pressure of the spring K G against the part G of the click. It will be seen that the same pressure of the spring K G will hold the lever against the banking c.

Claim.—The combination of two levers in such a way that one spring may perform the offices above described by acting on both of them.

No. 18,625.—DAVID BEDELL, of Seneca Falls, N. Y.—*Improved Device for Husking Corn*.—Patent dated November 17, 1857.—In using this invention, the knife c is raised in consequence of the operator grasping the bar B; and when the knife is properly adjusted on the bar C, the operator forces down the knife upon the butt, and the bar will also be forced down, the spring D yielding and forcing up the rod E, in consequence of its connexion with the spring through the lever f and link e. By the time the knife has penetrated the husk as far as it is allowed, the cross-head g strikes the ear and detaches or throws it from the butt and husks.

The inventor says: I do not claim the knife C attached to the bar B, nor do I claim any of the parts, separately considered; but I *claim* the knife C attached to bar B, in combination with bar c attached to spring D, and rod E¹ attached to said spring by means of the lever f and link e; the whole being arranged to operate conjointly as and for the purpose set forth.

No. 16,633.—EZRA SPRAGUE HOLMES, of Lockport, N. Y.—*Improvement in Machines for Husking Corn*.—Patent dated February 10, 1857.—

The corn is fed in at E, with its front end in the circular blade of the shears at B; the plates C, with the hands thereon, receive a vibrating motion towards and from B; as the hands recede, the points *g g* being thrown out against the guides $S^2 S^2$ by the springs *e e*, pass back between the guides S^2 and *q*, by which the hands are kept closed until they reach the angle of guides $S^2 S^2$ at q^1 , when the points *g g* are forced towards each other, which opens the opposite fingers. The spring guides $S^1 S^1$ permit said points *g g* to pass on to the outside of guides $S S$, thus keeping the hands opened till they meet again at B, when the points *g g* are made to drop off of the ends of guides $S S$ by the springs at *e e*, which causes the hands to close again; the guides *q q* assist the springs *e e* to close the hands, and keep them closed till the points again reach the angle of *q* and S^2 ; before the hands meet, the pin *p* hits the stop X in the guide p^1 , which stops the palm *a* and gives the fingers room to close; as the hands pass back, the spiral spring *y* presses the palm against the fingers, thus grasping the husks and tearing them from the corn; the fingers $Z^1 Z^1$ accommodate themselves to the shape of the corn by means of their spring shanks $Z Z$; the blade of shears K^1 is shut down upon the circular blade B by the cam *u*, just after the stem of the ear is thrown between them, by the hands pulling out upon the husks; the spring *t* opens the shears.

The inventor says: I do not claim the motive parts of this machine, nor the compound crank, nor the ways, slides, and arms, nor the shears; for they have been used before.

I *claim*, first, the huskers, consisting of the guides S^2 , q^1 , *q*, $S S$, p^1 , shown in figure 3, and of the hands *a*, *f*, *g*, Z^2 , Z , Z^1 , C, shown in figure 2, or their equivalents, operating in the manner and for the purpose substantially as described.

I also *claim*, second, the combination of the huskers, figures 3 and 2, with the shears, figure 1; said combination acting in the manner and for the purpose substantially as described.

No. 16,758.—HIRAM STRAIT, of Covington, Ky.—*Improvement in Machines for Husking Corn*.—Patent dated March 3, 1857.—The ears are all held against the toothed drum D in a vertical, horizontal, or inclined position by the ear-holders V, H, or I, respectively. O in each of the ear-holders is an edged hole, in which the ears rest and rotate as the drum revolves. The doors of the ear-holders are held down by springs S, and may be opened against said springs to let the husked ears pass out.

Claim.—The toothed drum D, with its projecting saw or knife K and cam X, in combination with one or more ear-holders V, I, H, arranged substantially as specified; also the ear-holders V, I, and H, when constructed and arranged substantially in the manner specified.

No. 16,740.—JOHN MASSEY, of Buffalo, N. Y.—*Improvement in Machines for Husking Corn*.—Patent dated March 3, 1857.—After the husks and stalk of the corn have been severed by the cutter A, the tip of the ear of corn is thrust into the revolving tubular burr B, and the husks are thereby loosened and removed from the corn.

The inventor says: I do not limit myself to the particular proportions set forth, but desire to include only such forms and proportions as substantially embrace the principle of my invention. I *claim* the tapering tubular burr B, for the purpose of removing the husks from the corn, when arranged and operating substantially as set forth.

No. 16,924.—A. R. HURST, of New Cumberland, Pa.—*Improvement in Machines for Husking Corn*.—Patent dated March 31, 1857.—The operation of this machine is as follows: The lever E, being depressed at a^x , the band D, attached to it, and passing over pulley J, compresses spiral spring d , and causes the jaws C to open. The ear is then inserted between the jaws C, lever a^x is released, and the handle H is turned on its fulcrum o , the knife p cutting off the butt from the ear, and thereby separating the husks. By again depressing lever E, the ear and husks will drop down, and another ear can be inserted.

Claim.—The employment or use of the sliding jaws or plates C, lever E, and plate or disk F, the jaws or plates C being connected to the lever E by straps D, and the jaws or plates C placed or fitted on the bed-piece or platform B; the above parts being arranged substantially as shown, and used in connexion with the knife or cutter p , for the purpose set forth.

No. 16,731.—HORACE HOLT, of Winchester, Mass.—*Hand Stamp*.—Patent dated March 3, 1857.—The toe G of the hand-lever F serves to depress the platen K. The toe b operates the lever N, to which the ink roller M is attached.

The inventor says: I do not claim operating the platen or stem and the inking roll by a simple operation of the hand; but I *claim* the combination of a detached lever, with its toe-pieces for inking and taking the impression, when said inking and impressing devices are returned to their places by springs L and m , as set forth.

No. 17,720.—GEORGE W. BACHMAN, of Clifton Springs, N. Y.—*Improvement in Machines for Husking Corn*.—Patent dated July 7, 1857.—The ears of corn are placed within the grooves a of the cylinder c ; and as the cylinder is rotated, the butts are cut off by knives F, the ears being retained in the grooves by spring C. The ears, as the butts are cut off from them, fall into the spout H, which has a vibrating motion given it in consequence of its connexion with screen I; and the ears pass down into screen I, and have their husks stripped from them by the teeth h of the board J, the screen and board moving in opposite directions in consequence of their connexion with driving-shaft L; the wire J serving to strip the husks from the teeth h .

Claim.—The grooved cylinder C, wires b , and knife F, in combination with the reciprocating screen I, provided with clearing teeth f , and the reciprocating toothed board J; the whole being arranged to operate conjointly as shown for the purpose set forth.

No. 18,473.—MARTIN W. STEVENS and EDWARD G. KINSLEY, of Stoughton, Mass.—*Improvement in Corn-Husking Machines*.—Patent dated October 20, 1857.—In using this improved machine the ears of corn, with their stalks and husks, are placed in the depression before they reach the severing knife. When the ear is moving forward on the apron, the knife *H* is at rest; and when the apron stops, the knife begins to descend, and with it a series of wire springs *g*. The ear is placed so that the stalk projects beyond the knife bed *I*; and as the knife descends it severs the stalk and attached portions of husks, the springs *g* serving to press upon and keep down the ear while being so severed from the stalk. The knife is jointed to or turned upon a pin *h*, and is moved up and down at proper times by a pin projecting from one end of the knife-bar into a cam groove cut in the rear face of a cam wheel *K*.

Claim.—The inventors say: We are aware that an endless apron with troughs has been used in a husking-machine for feeding the ears of corn.

We are also aware that an intermittent motion has been applied to a feeding cylinder, so that it shall stop at each time an ear is presented to the action of a husking cylinder, or to that of a cutting-off knife. We, therefore, do not claim such as our invention.

But we *claim* the plates *d d* and *i i*, provided with teeth or points for holding the husks, in combination with the piston or bar *L*, knives *v* and *H*, spring *g g*, and stop-plate *u*; the whole being arranged for operation substantially in the manner and for the purposes set forth.

No. 18,656.—GEORGE YOUNG, jr., of Saratoga Springs, N. Y.—*Improved Machine for Facilitating the Husking of Corn*.—Patent dated November 17, 1857.—In using this invention the operator seats himself upon the projecting end of the base or bench *A*, immediately in the rear of arbor *K*; and placing one foot upon the arm at the lower extremity of the actuating lever *b*, he throws the knife *a* and hammer *g* into the position shown in the engravings; then taking an unhusked ear of corn in his hands, he inserts the stem of it, which projects beyond the husks, under the holding-pin *h*, and steadies the tip end of said ear with his left hand; then, by the operator's straightening his leg and throwing back the lever *b*, the knife *a* is suddenly thrown upwards and severs the husks from the root of the cob; and the instant that the said knife has performed its work, the hammer *g* descends with force and throws the ear of corn entirely free and clear from its severed husks; and thus the operation may be continued with great rapidity, requiring the exertion of but a small amount of force on the part of the operator.

The inventor says: I *claim* the combination of the respective actuating parts thereof as above described, whereby the latch *i*, the knife *a*, and the hammer *g*, will act in conjunction with each other, in the manner and for the purpose set forth.

No. 18,607.—DAVID E. SHAW, of Ross County, Ohio.—*Improved Husking Palm*.—Patent dated November 10, 1857.—This improved husking palm is composed of a leather strap *A*, some two and a half

inches wide on the inside of the hand, and has a hole cut through it for the thumb in such a manner as to fit the hand; to one end of this strap there is attached a narrow strap having a buckle on it, which serves to fasten the palm to the hand. To the strap A there is riveted a thin iron plate B, which is made concave to fit the palm of the hand at and near the root of the thumb. Plate B serves as a stiffener to the palm to prevent soreness, and forms a support to steel tang C, which is riveted to the plate B; the tang is about two inches long, and is made a little crooked so as to stand out from the hollow of the hand, so that when the workman grasps an ear of corn it penetrates and splits the husks.

The inventor says: I do not claim a husking peg, to be worn across the inside of the fingers.

But I *claim* the husking palm, to be used on the palm of the hand for husking and breaking off the butts of corn, constructed and operating substantially as described.

No. 18,774.—PIERPONT SEYMUOR, of East Bloomfield, N. Y.—*Improvement in Machines for Spreading Lime and other Fertilizers*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I do not claim the use of the levers, rods, or eccentric or zig-zag wheels whereby I communicate motion from the carriage wheel to the distributing works, as such devices are well known and in use for various purposes.

But I *claim* the combination and arrangement of a series of vibratory plates or distributors *d*, attached to and working upon the face of an inclined plane or distributing surface C, by means of the rod F, or any equivalent connexion that will give the required motion to one end of said plates, while another portion is stationary upon the board or plane, in the manner and for the purposes described.

No. 17,693.—J. A. MOORE and A. H. PATCH, of Louisville, Kentucky.—*Improved Frame for Combined Mowers and Reapers*.—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim making the rear and outer end of the frame in one piece, nor do we claim the indiscriminate use of "angle iron."

But we *claim* making the rear and outer end of the frame of a combined mower and reaper of a single bar E of angle iron, when said bar E is bent into the form and united to the frame bars A A' C, and to the finger bar D and shoe E', as described and shown in the drawings.

No. 17,357.—AMORY AMSDEN, of Rochester, N. Y.—*Improvement in Mowing and Reaping-Machines*.—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim giving the bars of a reel, or of a

cutting-wheel, an inclined or spiral direction, such being a well known device.

But I *claim* the combination of a continuous helix F with the cutters C C, when said helix forces the grass or grain against the cutters in a direction transverse to the direction in which the helix revolves, for the purpose set forth.

No. 16,855.—JOHN TAGGART, of Roxbury, Mass.—*Improvement in Mowing-Machines*.—Patent dated March 17, 1857.—In this invention the bearing surface S is arranged at a distance from the rear edge of the cutter frame equal, or about equal, to the greatest breadth of each of the knives, while the bearing surface S is disposed in the rear of the front edge of the cutter-head in such a manner as to keep the knives R in the proper position for cutting the grass, as shown in the engravings. Just in rear of the sprocket-wheel M is arranged a stationary knife-sharpener T, formed of two blades of steel *c d*, arranged together as seen in fig. 2. While the knives are passing along the front part or guide S', they will extend beyond the cutter-head so as to cut the standing blades of grass, and with "drawing strokes" the guide S' performing the office of maintaining the knives in proper positions for cutting the grass. When the machine is pushed forward against the grass, its endless chain of cutters R R will be put in rotation in such a manner as to cause them to mow the grass and keep themselves sharp.

The inventor says: I do not claim a series of cutters in their application to grain and grass harvesters; neither do I claim a knife-sharpener.

But I *claim* a series of rotary cutters, working in recesses or guides S S', in combination with a knife-sharpener T, when the said parts are constructed and arranged for operation in the manner and for the purpose as set forth.

No. 17,355.—WILLIAM F. CHANNING, of Boston, Mass., and MOSES G. FARMER, of Salem, Mass., assignors to WILLIAM F. CHANNING aforesaid.—Patent dated May 19, 1857.—*Improvement in Fire-Alarm Telegraphs*.—If a fire is discovered in the vicinity of the signal station Z, an authorized person opens the signal box and turns crank *a* a number of times. The teeth *b' b''* on the circuit wheel depressing the key *c c'*, and in this manner break and restore the circuit at definite intervals, the key returning by its own elasticity. This operation causes the electro-magnet and armature of the central station Y, by repeated strokes on bell *r*, to indicate the number of the district and station whence the alarm originates. The operator, at the central station Y, by turning crank A, operates the transmitting apparatus A' B, causing the bells at the alarm stations *v* to give the alarm; and, by tapping on key *m m'*, the number of the signal station originating the alarm may be transmitted to any of the signal stations Z.

Claim.—First, the signal system described, consisting of a series of signal stations scattered at intervals through a whole city or town, or any part thereof, and telegraphically connected with a common centre or point, or with each other, by one or more signal circuits, by which

means a constant communication may be established and maintained between all parts of a city or town, however extended, and with the centre or centres at which the signal circuit or circuits converge or meet; so that the moment a fire occurs its existence and locality may at once be known at the centre of the system, and efforts for subduing it properly directed.

Second, the alarm system described, consisting of a series of alarm stations suitably distributed throughout a whole city or town, or any part thereof, and telegraphically connected with a central station' by one or more alarm circuits, by which means a public alarm of the existence and locality of a fire may be given at different points.

Third, in combination with the alarm system, for striking the number of the district upon the alarm bells, the signal system for communicating the number of the station at which the fire occurs to all the signal stations, as well as for communicating an alarm to the central station.

No. 17,417.—SILAS P. BRIGGS, of Saratoga Springs, N. Y.—*Improvement in Mowing Machines*.—Patent dated June 2, 1857.—To raise up the finger bar and cutters of this mowing machine the driver, on seat U, places his foot against lever K, pressing it forward till arms P and Q come into the same straight line, when they will become set, and hold the finger bar or dragging parts elevated for transportation. To let down the finger bar the driver may pull back lever K, by means of loop V.

Claim.—The peculiarly constructed attachment described, when connected to and used in combination with the Ketchum mowing machine, in the manner and for the purpose set forth.

No. 17,597.—JEREMY B. WARDWELL, of Methuen, Mass.—*Improvement in Mowing Machines*.—Patent dated June 16, 1857.—The beam C, which supports the knives *e*, by means of arm D, is applied to the wheel shaft B by means of a universal joint I; the sickle bar *d* is thus capable of adjusting itself to the contour of the ground over which the machine is passing.

Claim.—Supporting the finger bar and cutting apparatus from the main shaft, substantially as described.

No. 17,964.—ALANSON GALE, of Poughkeepsie, N. Y.—*Improvement in Mowing Machines*.—Patent dated August 11, 1857.—As the machine is drawn along, driving wheel A¹ imparts rotary motion to pinion H, wheel J, pinion K, shaft L, and reciprocating motion to pitman N and arm O, while arm S drives the cutter bar *f*.

Claim.—Operating the cutter bar *f* from the master wheel A¹ by means of the mechanism constructed and arranged in relation to the main frame and master wheel of the machine, substantially in the manner described.

No. 17,956.—WILLIAM BACHELLER, of West Newbury, Mass.—*Improvement in Mowing Machines*.—Patent dated August 11, 1857.—

The thill frame I is hinged at *a*² to the cutter frame F, and can be raised or lowered for the purpose of harnessing the animals, while it also yields to slight obstructions on the ground.

The inventor says: I am aware that the thill frames and cutter frames have been variously connected, and in many instances by flexible joints, but not in the peculiar manner described.

I *claim* the combination of the thill frame I with the cutter frame F, when said frames are constructed and used in combination with the supporting wheels B B and operating wheels C C, in the manner and for the purposes set forth.

No. 18,141.—GEORGE C. DOLPH, of West Andover, O.—*Improvement in Mowing Machines*.—Patent dated September 8, 1857.—By turning lever *a* on its pivoted point *b*, the sliding box *g* is raised between its guides *h*; and the brace bar I, which is hinged to the sliding box, is also raised, and with the same the cutter bar B of the harvester.

Claim.—The lever *a*, links *e*, sliding box *g*, and guides *h h*, with the adjusting wrist *j*, when arranged as set forth, and in relation to an adjustable cutter bar as described for the purpose specified.

No. 18,187.—A. H. CARYL, of Sandusky, O.—*Improvement in Mowing Machines*.—Patent dated September 15, 1857.—The force applied to tongue E to move forward the machine tends to elevate the cutter bar F; and the driver, on seat G, is enabled to raise it entirely from the ground by bringing part of its weight upon treadle O. The machine may be backed without forcing the cutter bar to the ground by the forked end *a* passing over pin *c*.

Claim.—The combination of the rear portion of the tongue or hounds E E with the main or wheel frame A and seat G, said parts being arranged for joint operation, in the manner and for the purposes set forth.

No. 18,510.—JOHN P. MANNY, of Rockford, Ill.—*Improvement in Mowing Machines*.—Patent dated October 27, 1857.—The nature of this invention relates to the hanging or suspending of the cutter bar F by flexible connexions, such as cords or chains, at both its ends, to rigid frames, so that it may be raised and lowered by both its ends at the same time by the driver in his seat, and without straining or twisting the cutter bar.

Claim.—Suspending, elevating, and lowering the cutter bar of mowing machines in a horizontal position by means of flexible connexions, such as cords or chains attached to each of its ends, when the same are arranged in relation to, and used in combination with, independent rigid frames, substantially in the manner and for the purposes described.

No. 18,788.—EPHRAIM BALL, of Canton, O., assignor to Himself and JOHN BUTTER, of Buffalo, N. Y.—*Improvement in Mowing Machines*.—Patent dated December 1, 1857.—The cutter bar P is permitted to rise and fall bodily, or either end may rise or fall, according to the irregularities of the ground, in consequence of its connexion to

the frame A, by the bar 2 ; for the upper end of said bar is connected to the frame by a universal joint, the pivot *g* allowing the finger bar and bar 2 to rise and fall bodily, and the ability of the rod *f* to turn in the socket *h* permitting either end to rise and fall ; the base rod R serving to steady the finger bar while it is moved, and to prevent it from being wrenched out of place by the resistance of the grass or other obstacles ; and thus the finger bar is, under all circumstances, at liberty to conform to the unevenness of the ground, and consequently the sickle will perform its work better and with greater uniformity than it otherwise could do.

Claim.—The combination of the short curved brace rod R with the rigid and broad angle attachment of the inclined bar 2 to the finger bar P, the whole arranged for joint operation, substantially as and for the purpose above set forth.

No. 18,975.—SILAS E. JACKSON and MORGAN P. JACKSON, of Booneville, N. Y.—*Improvement in Mowing Machines.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Counteracting the side draft of a harvesting machine, by attaching the power that draws it to the uncontrolled end of a chain ; the other end of said chain being attached to the lower end of a stud, or bar, located and arranged with regard to the frame, as described.

No. 18,976.—SILAS E. JACKSON and MORGAN P. JACKSON, of Booneville, N. Y.—*Improvement in Mowing Machines.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventors say : We do not claim a raising wheel and lever as generally applied to harvesting machines.

But we *claim* the combination, in harvesting machines having but one main supporting wheel, the finger bar resting on the ground, and supported by braces connected with it and the main frame of the machine, of the hinged lever E and hinged axle F with its wheel I, when arranged and located in relation to the rear cross-piece of the frame and the driver's seat substantially as described.

No. 18,800.—CHESTER BULLOCK, of Jamestown, N. Y.—*Improvement in the Cutting Apparatus of Mowing Machines.*—Patent dated December 8, 1857.—A is the finger bar ; B is the guard fingers, or teeth, to which the cutters D are hung by pins *a*, which are fixed in the guards B. The back end of the cutters is hung to the under side of the cutter bar E, by a single pin *b* to each cutter, on which pins the cutters may vibrate freely, as the machinery is so operated as to cause them to do so. These pins *b* are fixed in the cutter bar.

The cutters are hollowed, or cut away, forward of the cutting portion. The grass is cut at each stroke fully up to the points of the teeth G, they having very little, if any, tendency to throw the grass down.

The inventor says : I *claim*, 1st. The mode described of attaching

the cutters to guard teeth and to the cutter bar, in combination with the shortened lip *b*, by which I am enabled to readily detach said cutters for grinding or for other purposes, as set forth.

2d. A hollowed cutter, so arranged in connexion with other parts as to present the same, or nearly the same, cutting angle in every part of the stroke, when the teeth are hinged to their axes *a* forward of the cutting parts, as set forth.

No. 18,983.—ABRAHAM MARCELLUS, of Amsterdam, N. Y.—*Improvement in Track Clearers for Mowing Machines*.—Patent dated December 29, 1857.—A is the outer portion of the framing of a mowing machine that supports the inclined wing B. C is a plate, or board, which forms the track clearer. The front end of this plate is pivoted at *a'* to the metal shoe, or divider, *a**, fastened to the front part of the framing, adjoining the finger bar D.

The plate or board C has a spring E fastened to its inner edge, and an arm *a* is attached to the outer side of C, said arm having a friction roller *b* in its outer end. F is the wheel which supports the outer end of the framing.

Claim.—The vibrating clearer C and adjusting spring E, in combination with the wing B, divider *a*, and operating wheel F, said parts being constructed and arranged in relation to each other as and for the purposes set forth.

No. 18,363.—JOSEPH W. THORN, of Courtland, Me.—*Improvement in Machines for picking Cotton in the Field*.—Patent dated October 6, 1857.—This invention relates to that class of machines for picking cotton in the field which are driven by horse power, and in which the cotton is collected by a number of picking cylinders, and deposited by them on a receiver.

In the drawing, figure 1 represents a top view of this machine, figure 2 the cylinders, and figure 3 a perspective fraction of the cotton receptacle.

The inventor *claims* the method of delivering the cotton within the receptacle G, by means of the teeth *d* turning on shafts *b*, in combination with the cam rods K and toes *h*, for returning said teeth to the position for picking the cotton, substantially in the manner set forth.

No. 17,362.—SILAS P. BRIGGS, of Saratoga Springs, N. Y.—*Improved Hand Seed Planter*.—Patent dated May 26, 1857.—As the plunger P descends, the wire D, being elastic, slips over a notch on the rim of the wheel C, said wheel being prevented from turning back by spring H; when the plunger P is raised, the wire D carries the wheel round the distance of one notch, which causes a chamber in said wheel to come over an opening below and to discharge its seed. By pressing the elastic rod I into notch K of the plunger said plunger is fastened, and the machine may be pressed into the earth with as much force as the operator pleases, and on releasing rod I the plunger is driven down.

Claim.—The set or fastener I, in combination with the plunger, arranged and operated substantially in the manner and for the purpose set forth.

No. 18,756.—TOBIAS MARCUS, of New York, N. Y.—*Improvement in Cane Planters*.—Patent dated December 1, 1857.—The nature of this invention consists in attaching to the common plough used in furrowing this improvement, which is so constructed that, while the plough clears one furrow, the attached machine will cover the cane plants which have been placed in the adjoining furrow; the machine thus performing the labor that has heretofore been done by hand with the hoe.

Claim.—The adjustable mould-board F, arranged and operated by means of the circular slide M, in combination with the adjustable beam A and socket B, secured by braces C and N, in the manner and for the purpose as described and shown in the drawings and specifications.

No. 16,410.—JOHN S. TOAN, of Venice, N. Y.—*Improvement in Corn Planters*.—Patent dated January 13, 1857.—The cogged wheel G, on driving wheel B, meshes into bevel wheel E, the cells *c* of which become filled with corn as they pass under the hopper C; the contents of each cell passing down the tube F', where the grain drops on the sliding valve I, which is operated for the discharge of the seed by means of cam L, operating bent lever K of fulcrum *d*', which in its turn actuates lever J and slide valve I.

The inventor says: I do not claim the general construction and operation of the machine, and am aware that many of the devices employed have before been used, as specified.

I claim the combination and arrangement for operation together, substantially as shown and described, of the lower striking tube F, having a plough-bit in front and covering roller rigidly attached to it in the rear, with the secondary cross-sliding valve I and its operative lever J, arranged to form part of said sliding tube F', the whole being supported by the covering roller and plough-bit, for the more perfect and easy operation of the secondary valve and sliding tube, as specified.

No. 16,551.—SAMUEL M. PERKINS, of Fort Hill, Ill.—*Improvement in Corn Planters*.—Patent dated February 3, 1857.—The draft pole P is secured to frame F, connected with shaft S by means of two straps *a*, leaving the shaft free to turn whenever ring *d* is withdrawn from pin *m* projecting from frame F. A is the driver's seat. By operating lever *c* the catches *e e*¹ may be caused to enter notches in the inner ends *n* of the wheel hubs, and thereby the wheels will be fixed to the shaft, at the same time that the ring *d* is withdrawn from the pin *m*, as above mentioned. Thus the shaft will be allowed to turn with the wheels.

Claim.—The seed chambers *e* upon the shaft S with radial depositing apparatus B, in combination with the wheels and the mechanism by which said wheels are adjusted relative to the shaft, arranged and operating as set forth.

No. 16,611.—MARTIN ROBBINS, of Cincinnati, O.—*Improvement in Corn Planters*.—Patent dated February 10, 1857.—One end of the chain *i* is made fast at one end of the field, and the other end of the chain at the other end of the field. The chain having been placed within

the box at the end of the arm *f*, as the machine is drawn forward the buttons *k* and spring *w*, acting through the vibrating tappet *g* on the seeding mechanism, cause the depositing of the seed at regular intervals. When the machine has reached the termination of a row, the chain is removed from the arm, and the machine is brought on to the next row facing in the opposite direction. The arm and hopper are then swung around until the former projects from the opposite side of the beam, and the chain (having been shifted the proper distance) being again placed within the box, the work proceeds as before. By using the reversible hopper and arm, the chain may always be placed on the planted side of the field.

Claim.—The reversible hopper *b* and arm *f* with the vibrating claw or tappet *g*, connected as described with seeding mechanism, in combination with the jointed rod or chain *i*, provided with buttons *k* or similar devices, for the purposes explained.

No. 16,930.—JOHN MILLER, of Bucyrus, O.—*Improvement in Corn Planters.*—Patent dated March 31, 1857.—The two slides *f* and *f*¹ are operated simultaneously, and the seed is dropped from the compartment *c* into the furrow made by share *H*, and by the side of the furrow a quantity of gypsum or lime is dropped from the compartment *d*, indicating the precise spot where the seed is deposited.

The inventor says: I do not claim the perforated and reciprocating slides *f f*, for measuring and distributing the seed and gypsum or lime, for they are well known and commonly used. But I claim the auxiliary compartment *d*, having a slide *f*¹ acting simultaneously with the seed slide *f*, arranged and operating as described, for the purpose of designating the point of planting, as set forth.

No. 17,258.—JOHN BROUGHTON, of New York, N. Y.—*Improvement in Corn Planters.*—Patent dated May 12, 1857.—By pressing down handle *I* and plunger *B*, the seed in the recess *H* is carried from sack *I* to chamber *P*, the tube *E* resting on the surface of the ground. By further pressing downward plunger *B* it forces the seed from recess *a* into tube *E*, forcing at the same time tube *E* into the ground. By then raising the implement the seed drops from chamber *P* into recess *a* for the next operation.

Claim.—The distributing device formed of the block *A*, having the opening *a* made longitudinally through it to receive the plunger *B*, having the recess *H* made in it, the block being provided with the chamber *P*, slide *D*, and tube *E*, when said distributing device or its equivalent is used in combination with the flexible tube or sack *J*, and the whole arranged to operate as shown, for the purpose set forth.

No. 17,397.—F. J. SMITH, of Four Corners, Ohio.—*Improvement in Corn Planters.*—Patent dated May 26, 1857.—When this machine is in operation the plates *n*, attached to the rods *m*, are pressed towards the tongue *P* by springs *i*, so as to allow the seed from hoppers *H* to pass into the seed tubes *a*; by depressing the long arm of lever *L*, the front part of the machine is raised, and the bent ends of rods *m* are forced asunder by reason of the wedged-shaped form of the tongue *P*, as represented in figure 3, and the plates *n* close the passage from the hoppers to the seed tubes.

Claim.—The combination of the rods $m m^1$ and cut-off plates n with the springs $i i$ and the inclined recesses in the tongue, arranged and operating as described for the purposes specified.

No. 17,380.—ROBERT KUSCHKE and PETER MERKEL, of St. Louis, Mo.—*Improvement in Corn Planters.*—Patent dated May 26, 1857.—As the machine is drawn along, the driving wheels B rotate the crank shaft F, by means of gearings D E, and a reciprocating motion is imparted to the seed boxes L, which causes the seed to drop through the tubes P to the ground.

Claim.—The reciprocating seed boxes L, arranged and operated in the manner and for the purpose set forth.

No. 17,582.—WILLIAM T. PEPPER, of Rising Sun, Ind.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—As the machine is drawn along, the wheel a is rotated and carries up between the flanges B b a portion of earth, which being removed from the wheel by scrapers d , passes down through spout e , and is deposited on the upper floor $f f$ of the seed box. When it is desired to plant a hill, the rear part of the machine is depressed to bring the seed box l in contact with the ground; while the machine continues to move forward, the lower end of the box remains stationary, bringing it into the position shown in dotted lines. At the same time the depression of the rack j closes the entrance to the upper chamber F of the seed box, causing the segments r and r^1 to turn slightly and to open the bottoms of the two chambers in the seed box simultaneously, and to allow the seed contained in the lower one to fall on the ground, while the earth contained in the upper chamber falls and covers the seed. At the same time the upper teeth of rack j rotating the cog-wheel m bring the cup o in position to receive the seed for the next hill.

Claim.—1st. The arrangement of the flanges B b , on the periphery of the wheel a , when used in connexion with the plate n , scrapers d , and receiving or conducting spout e , or their equivalents, the whole being arranged and operating in the manner substantially as and for the purposes set forth.

2d. The rocking seed-box l , having its lower end held stationary during the act of planting by contact with the ground, and operated automatically by the power by which the machine is drawn forward; in the described combination with the falling floors $f f g g$, and seed measuring and delivering mechanism $n o p$, operated by means of racks j , by depressing the box against the ground, as set forth.

No. 17,584.—SYLVANUS RICHARDSON, of Jericho, Vt.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—When the planters are pressed to the ground, the slide 6 is raised, and spring 12 attached thereto turns the notch wheel 15 and seed cylinder 10 one notch and empties one notch of its corn; at the same time as the corn leaves the seed cylinder and lodges against the slide 8, the plunger 5 carries the preceding charge into the ground; and when the planters are raised, the slide drops of its own weight and the corn passes under the end of plunger 5, and is prevented from passing out by spring valve 7 having

a cord 14 fastened to the planter at one end and the other end to the valve 7; and when the slide rises as the planters are pressed to the ground, the cord 14 slackens and the valve opens and the plunger presses the corn into the ground.

Claim.—The seed cylinder 10 operated by spring 12 in combination with slides 6 and spring valve 7, constructed in the manner and for the purposes set forth.

No. 17,566.—IVES W. MCGAFFEY, of Buffalo, N. Y.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: While not claiming a swinging frame carrying the seed boxes and ploughs and by which the ploughs are raised or lowered as described,

I claim hanging said swinging frame E by boxes F upon fixed sleeve boxes G, arranged around but distinct from the axle C to insure freedom of the axle against the resistance encountered by the ploughs, without in the swinging of the frame E varying the relative concentric position of the axle and seed distributing devices thereon to the seed boxes.

No. 17,786.—ALVIN FRANKLIN, of Genoa Cross Roads, Ohio.—*Improvement in Corn Planters.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the plough box extension E and hoe F in the rear of the planting tube or passage for operation together, and with an intermittent corn discharge or seed depositing arrangement substantially as specified, for the purpose set forth.

Also providing the plough box extension E with a knife or scraper π arranged in relation to the hoe, for the purpose of clearing the latter in its back spring or stroke, as shown and described.

No. 17,841.—NORMAN A. LEWIS, of Glen's Falls, N. Y.—*Improvement in Corn Planters.*—Patent dated July 21, 1857.—As the machine is drawn along, the axle d , by its rotation, conveys the corn which passes into the recesses f around into the band l ; the corn passes into tubes n , and as the ends of these tubes enter the ground, their respective slides i will be raised by the curved incline o , over which the rollers r on the rod j alternately pass, and the corn will be deposited in the soil.

The inventor says: I do not claim distributing the corn or seed through hollow arms, or through spouts placed radially in the driving wheel, so that the corn or seed will be deposited in the soil from the periphery of the driving wheel, for this has been previously done.

I claim having the slides i placed over the ends or orifices of the conveying tubes H , the slides being attached to the ends of the same rod j , and operating said rod by means of the curved incline o , attached to the rod or bar D , and the pulley or roller attached to the rod j , the whole being arranged as shown, whereby the slides are actuated or opened and closed alternately for the purpose set forth.

I further claim the hoe II attached to the frame G, which is placed within the roller frame F, arranged as shown, and operated by the projections Q on the driving wheel B, for the purpose specified.

No. 17,898.—CHARLES SCHNEFF, of Lancaster, Pa.—*Improvement in Corn Planters*.—Patent dated July 28, 1857.—As the machine is drawn along, a vibrating motion is imparted to the hoes F, which operate the slides K, and cause the seed to drop to the ground through passages J.

The inventor says: I am aware that shovels and teeth are attached to slides for planting corn, but these I do not claim.

I *claim* the semi-circular shaped scooping hoes F, with jointed ends E, in combination with the sliders K, and operated by the revolving levers C, as arranged and constructed substantially as described for the purposes set forth.

No. 18,140.—J. W. ELLS and JAMES CHARLTON, of Pittsburg, Pa.—*Improvement in Seed Planters*.—Patent dated September 8, 1857.—As the machine is drawn over the field, the slide J has a reciprocating motion imparted to it by means of eccentric G, and causes the seed in hopper A to pass through the holes *x*, and into the seed tube, the slats *t* covering at each operation two of the holes *x*, permitting the seed to pass only through the other two. The object of these slats is to compensate for the inaction of the eccentric at its dead points, during which time the wheel C turns a certain portion before the slide J commences to move.

Claim.—The combination and arrangement of the reciprocating feed slide J with the cut-off slats *t t* and the brush L, in the manner and for the purpose set forth.

No. 18,127.—D. R. ALDEN, of Unionville, Ohio.—*Improvement in Corn Planters*.—Patent dated September 8, 1857.—As the machine is drawn along, the knobs *i* of the belt K catch against the ends of the arms of the wiper wheel *g*, and rotate the wheel F intermittently, and the seed passes at certain intervals down through passages *e f f*¹ into seed tube D, and into the furrow.

The inventor says: I do not claim the wheel F for distributing the seed or conveying it from the hopper into the spout, for that is well known and in quite common use.

But I *claim* operating or rotating the wheel F by means of the belt K, having knobs *i* attached, and the wiper wheel *g* attached to the shaft *b* of the wheel F, the above parts being arranged substantially as shown and described.

No. 18,128.—HORACE R. ALLEN, of Athens, Ohio.—*Improvement in Corn Planters*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The lever J, pins K, scraper H, spring I, and rake M, when arranged in the manner described, and in combination with the spout G and valve V, for the purpose set forth.

No. 18,508.—HANFORD INGRAHAM, of Naples, N. Y.—*Improvement in Corn Planters*.—Patent dated October 27, 1857.—The sides and ends of the seed hoppers S S are of wood, the bottoms of zinc; the valves *n n* are of a circular form, with an aperture *z* in the side, to contain the seed sufficient for a hill, and are placed in a bed piece in which is an opening to receive the valve *n n*. At the other end a brush is attached, to regulate the distribution of the seed. The bed piece is secured to the under side of the bottom of the hopper, bringing the valves directly under the back ends of the hoppers, and bringing the apertures within the hoppers through an opening in their bottoms, through which the seed passes. To one corner of the hoppers is attached a vibrating spring *v v*, extending a little past the centre and elevated a little above the hoppers. To this spring is attached an agitating wire *w w*, extending down nearly to the aperture in the valve.

The inventor says: I do not claim any of the described parts separately or irrespective of their arrangement.

But I *claim* the arrangement of the seed hoppers S S, in connexion with the hollow teeth *f f*, the valves *n n*, agitating wires *w w*, the vibrating springs *v v*, for the purpose and in the manner substantially as set forth.

No. 18,768.—BRADLEY LOCK PRIME, of Hamilton, Ohio.—*Improvement in Corn Planters*.—Patent dated December 1, 1857.—The operation of this improvement is as follows: The projections *n n*¹ *n*², by slightly moving the slide D beyond its cavity, are carried under partition *c*, serve to settle the grain in its cavity, and insure the more proper filling thereof. As the cavity passes under partition *c*, under the action of projection *m* upon lever *k*, it will carry its contents to discharge opening *d*; but in the event of packing of the grain in the cavity to such an extent that the motion of the slide would be stopped, or the grain cut, the partition *c* will be carried in the direction of the motion of the slide, and the contents of the cavity dropped through opening *d*, the partition resuming its place by the force of spring *g*. When the grain becomes jammed between the partition and the grain cavity, before the cavity reaches the partition, the partition yields, and the shake given by the projection on the cam wheel E settles the grain in the cavity, and the partition resumes its place.

Claim.—The yielding partitions *c* of the hopper, constructed, arranged, and operating as and for the purpose set forth, in combination with the secondary projections *n n*¹ *n*² of the cam E, the whole operating as described.

No. 18,798.—J. H. BONHAM, of Elizabethtown, Ohio.—*Improvement in Corn Planters*.—Patent dated December 8, 1857.—In the engravings B is the plough stock; C D the plough; H the covering flukes; G the conical reservoir; X the handle; J the tilting pins; F the conducting spout; E the block or bottom; K is the inner ring; *a a* oblong holes in the inner ring; *b* is its slot; L is the outer or thick ring; *c c* are oblong holes in the outer ring; *b* is the outer slot and screw of the inner ring; *a a* are holes to supply *c c* with corn; figure 4 is the cap to fit on

the conical reservoir ; A is a disk having a flange M upon its periphery ; *n* is a segmental flange placed from O¹ upwards a sufficient distance from M to receive figure 6 ; *q* is an opening in M for the exit of the corn ; *t* is a slot in the segmental flange ; O¹ *o* is a wire spring playing in the slot to force the corn out of the holes into the spout ; S S is the height of corn in reservoir ; S *v* is the segmental space.

The inventor says : I claim a conical seed reservoir G, in combination with the caps or disks A, figures 4 and 8, operated by the handle *x*, and constructed and arranged in the manner and for the purpose set forth.

I also claim the conducting spout F, in combination with tilting pins I and block or bottom E, constructed and arranged as set forth.

No. 18,846.—J. J. S. HASSLER, of Ripley, Va.—*Improvement in Corn Planters*.—Patent dated December 15, 1857.—The inventor says : By having detachable sliding perforated gauge-valve blocks or seed-escapes *f f f*, of different thicknesses, with larger or smaller seed escapes, any size can be inserted between the alternately actuating and reacting pressure springs *i i i*, very readily lifting up the flap *b b b* of the hopper, and thus one size may be substituted for another.

The inventor says : I am well aware that various kinds of hand corn planters have been constructed with internally arranged springs and valves and seed escapes ; consequently I disclaim such devices.

But I *claim* the detachable sliding, perforated gauge-valve blocks or seed-escapes *f f f*, with the alternately actuating and reacting pressure springs *i i i i*, the adjustable graduating tapering throat blocks C C C C, together and in combination with the hopper and striding equi-distant legs and spouts, arranged and operated as described and set forth.

No. 16,368.—WILLIAM BADGER, of Memphis, Tennessee.—*Improvement in Cotton Seed Planters*.—Patent dated January 13, 1857.—The driving wheel F imparts rotary motion to shafts H and L, and the arms *b* and *c* of said shafts work through the seed in the hopper G, and cause the same to drop to the ground. As the quantity of seed in the hopper diminishes, the operator, by pulling the cords *d*, brings the false sides N of the hopper towards the shafts, and thus the seed is constantly within reach of the arms *b c*.

Claim.—In combination with one or more sets of feeding arms, centrally located in the hopper, the false sides in the hopper, for drawing or forcing the cotton seeds up to said feeding arms, substantially as set forth.

No. 16,550.—JAMES F. ORR, of Orrville, Alabama.—*Improved Cotton Seed Planters*.—Patent dated February 3, 1857.—The plate E may be adjusted by means of set screw F so as to regulate the discharge of seed.

Claim.—Combining an adjustable plate E with the seed cylinder D, in the manner and for the purposes set forth.

No. 17,221.—HENRY L. JUSTICE and JOHN H. GALBREATH, of Goodlettsville, Tennessee.—*Improvement in Cotton Seed Planters*.—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of rag wheel *d*, having adjustable arms *Z*, with the movable hopper *f* of a cotton seed planter, the whole being arranged and operated in the manner set forth.

No. 18,109.—WARREN A. SIMONDS, of Boston, Massachusetts.—*Improvement in Portable Gas Generators*.—Patent dated September 1, 1857.—The pipes *B* and *C* having become sufficiently heated, a jet of oil is forced through pipe *L* into pipe *B*, where it comes in contact with the heated metal and is converted into an imperfectly formed gas or vapor; thence this vapor passes through half turn *D* into pipe *C*, where it is still further heated and converted into gas, which passes off through pipe *F* and cock *G* to the purifier.

Claim.—The tubular retorts *B* and *C* of the form described, operating in the manner substantially as set forth, for the manufacture of oil gas.

No. 18,482.—T. W. WHITE, of Milledgeville, Georgia.—*Improvement in Cotton Seed Planters*.—Patent dated October 20, 1857.—In this invention a deep ring or flange *E* encircles one of the frusta at the point of its greatest diameter, and close to the edge of the discharge opening, in the same vertical plane as the plough *C*. This flange raises the hopper so high above the ground that the discharge opening does not come in contact with the earth, and it also protects the hopper from striking against rocks or other obstructions; it also greatly increases its stiffness and strength. The plough *C*, which is of the usual construction, is hinged to the forward end of the frame *A* by a bolt *h* passing through the sides of the frame and through the stock of the plough.

Claim.—The inventor says: I *claim* 1st. The arrangement of the flange in relation to the hopper and the plough, so that it will follow in the furrow made by the plough, and elevate the discharge opening for the seed above the ground for the purposes described.

2d. The combination of the plough, the seed coverer, and adjustable connecting rod *m*, when arranged in the manner and for the purpose set forth.

No. 18,913.—LORENZO D. LAW, of Henderson, Ga.—*Improvement in Cotton Seed Planters*.—Patent dated December 22, 1857.—Motion is communicated to the axles *C* *C'* *C* by means of a bevelled wheel *e*, placed under the hopper and immediately in front of the slot *E*, turning loosely in gearings *g g*, and carrying on one end of its axle a crank arm *h*, to which is attached a pitman rod *h'*, which extends to the end of the centre arm *h''* of the axle *C'*; the other two arms *h'''* are connected to this arm by a rod *r*, so that the turning of the wheel will communicate motion to the set of axles and agitators.

Claim.—The employment of the vibrating agitators *C* *C'* *C*, each having their radiating arms arranged with respect to each other as

set forth, in combination with the longitudinal slot E at right angles to the axis of the radiators, as set forth.

No. 16,677.—JOHN H. BRUEN, of Penn Yan, N. Y.—*Improvement in Hand Seed Planters*.—Patent dated February 24, 1857.

Claim.—The thin broad extremity F, or its equivalent, at the lower end of the rod B, acting as a cam to open the blades, by giving said rod a partial turn with the hand, substantially as specified.

Also, in combination with the above, the arrangement of the seed distributor G on the rod B, whereby the seed is made to drop simultaneously, and only with the opening of the blades, as described.

Also, the star or coral-shaped attachment I of the rod B, operating as described, so as to insure the regular action of the seed distributor.

No. 17,089.—PLYMON B. GREEN, of Chicago, Ill.—*Improvement in Hand Seed Planters*.—Patent dated April 21, 1857.—On forcing the machine down, the point K enters the earth until foot A strikes the earth, when the machine slides down on slide B; slide B wedges out catch C from under the stop E, and the plunger O slides down and forces the seed into the earth; at the same time the seed in the cavity P is carried below the seed box D and deposited at S. On raising the planter from the earth, the plunger O slides up, and spring L forces catch C under stop E. Stop E and catch C prevent the plunger from forcing out the seed until the point K enters the earth to a certain depth.

Claim.—The combination of slide B, catch C, and stop E, constructed and arranged to hold the plunger stationary until the point K enters the earth to a certain depth, substantially as described.

No. 17,081.—JOHN DECKER, of Sparta, N. J.—*Improvement in Hand Seed Planters*.—Patent dated April 21, 1857.—The seed D is placed in hopper A, and the fertilizer in hopper A¹. When the slides *b* are forced down within the box B, the seed and fertilizing material will fall by their own gravity into the openings *h*. When the slides are drawn upward, so that the openings *h* will be above the upper ends of the partition plates *a*, the seed and fertilizing material will fall down to the lower end of spout *g*; and when the slides are again depressed, the longer slide B will force the plate C out from box B, pushing the seed and fertilizing material into the ground.

The inventor says: I am aware that reciprocating perforated slides for planting or distributing seed have been used, and I do not claim such separately or in themselves considered.

But I *claim* the slides *b b*, fitted in the box B, and placed relatively with the hoppers A A¹ as shown, and the plate or clearer *f*, attached to the block *d*, when the above parts are combined and arranged so as to operate conjointly, as shown, for the purpose specified.

No. 17,080.—THOMAS CRANE, of Fort Atkinson, Wis.—*Improvement in Hand Seed Planters*.—Patent dated April 21, 1857.—The apparatus being in position as represented in figure 2, the seed drops from the receptacle *g* through passage *m*, on to the upper bent end of spring D;

and by raising sliding rod *b* by means of handle *A*, the bent end of spring *d* falls into the recess *n*, the spring *d* expands and opens the passage *c*, and the seed drops down within the concavity *r*; on the next downward movement of sliding rod *b*, it forces spring *q* aside, turning block *a* on its fulcrum *x*, and the seed is forced into the ground.

Claim.—The combination of the pivoted and spring actuated block *a* with the grooved and perforated sliding slat *b*, substantially in the manner and for the purpose set forth.

Also the combination of spring *d* with the grooved and perforated sliding slat *b*, in such a manner that the inclined aperture *n* in the back of the planter will operate said spring, substantially in the manner and for the purpose set forth.

No. 18,145.—JOEL HAINES, of West Middlebury, Ohio.—*Improvement in Hand Seed Planters.*—Patent dated September 8, 1857.—When the plunger *F* is raised, the slide *K* is moved from the seed box *B* to the position represented in the engraving, and the seed in cell *S* drops down on plate *P*; and when the plunger is pushed down, the slide *K* and cell *S* move into the seed box, and the plunger forces the seed into the ground; as the plunger rises again, the moist earth adhering to the same is scraped off by scraper *X*, and passes off through opening *W*.

Claims.—The opening *w*, through the standard or its equivalent, so arranged as to form a bar or scraper, substantially as described, to clear the earth or wet earth from the plunger as it is pushed down, and deliver it out through the opening *w*, as described, whether the upper edge of the scraper is curved or otherwise.

No. 18,827.—STEPHEN H. STRONG, of Brunswick, Ohio.—*Improvement in Potato Planters.*—Patent dated December 8, 1857.—By this invention, when the planter is moved forward, the bucket strikes against the head piece of slide *R*, and, forcing it back, passes through the seed box *C*, by which it is filled; and, as it rises, the slide *R* is forced back by the spring *P*, and the seed box is again filled from the hopper *C* and is ready for the next bucket, the seed, or potatoes, being carried over the wheel until it falls over the check *E* into the furrow, at equal distances apart, falling between the mould-boards of the plough, and is covered by the inverted mould-boards and the levelling scraper.

Claim.—Seeding wheel *B*, armed with adjusting buckets *D* and checks *E*, in combination with the hopper *C* and sliding bottom *R*, in the manner and for the purpose set forth.

No. 16,409.—JOSEPH THOMPSON, of Durhamville, New York.—*Improvement in Seed Planters.*—Patent dated January 13, 1857.—By pushing down the handle *W*, the roller *H* is caused to revolve and the seed cells *a* are turned upwards and are filled with seed from hopper *O*. By lifting the handle, the seed in the cells *a* passes around with roller *H*, drops into the tube *S*, on to spring *T*, so that when the handle is pushed down again the tube *S* is forced into the ground until plate *Y* is stopped by rod *f* striking stand *h*, when the punch *V* forces

the seed, by the springs T, out of the tubes, so as to leave them in the ground.

Claim.—The spring-plate Y, or its equivalent, so constructed and arranged as to hold the earth down firmly while the punches V and the tubes S are drawn out of the earth, substantially as described.

No. 16,522.—LEVI BEEMER, of Libertyville, New Jersey.—*Improvement in Seed Planters.*—Patent dated February 3, 1857.—Figure 1 represents a side view of the seed planter, and figure 2 a similar side view with one thill C and a side plate B removed.

Claim.—A combination of triangular seed boxes located upon the sides of the drive wheel, as specified, with the measuring keys E E E, operated by the cams J¹ J¹, to admit the seed into the depositing cups G G G.

No. 16,590.—JOHN HILDEBRAND, of East Berlin, Pennsylvania.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The engraving represents a top view of the seed box. The slides L and M are operated by means of vibrating lever O. The slots S S in said slides are for the reception of the seeds. R R are cut-off plates placed over the discharge orifices in the bottom of the seed box, under which plates the slides pass. T and U are scrapers, which work in contrary directions to the slides, U being connected to the lever end P, and T to the lever end Q, by means of springs V and W.

Claim.—The combination of the above described spring connexion V and W, slides L and M, scraper T and U, and the vibrating head cam O, when arranged for the purpose set forth.

No. 16,617.—H. THOMASON, of Lafayette, Ind.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The operator, by turning the tube handle H, can operate the slide F.

The inventor says: I do not claim the slide F, nor the mode of operating the slide by the wheel I, with the pins α^1 , attached, and the bent lever K, for these parts are well known.

Neither do I claim operating the slide F by hand, irrespective of the means shown and described for effecting the purpose.

But I *claim* operating the distributing device of slide F by means of the lever or rod G, having the arm e^1 attached to its fulcrum-bar d , which has a spring e connected with it, and the collar or tube H on the handle C¹ of the implement, the collar or tube H being provided with an arm h extending underneath the arm e^1 of the fulcrum-bar d , the whole being arranged substantially as shown and described for the purpose set forth.

No. 16,585.—THOMAS B. HOUGHTON, of Bloomington, Ill.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The frame x is made to traverse in hangers Y Y, by means of crank T and connecting rod Z. Thus it guides the seed box W and planting slide V, and makes them deposit the seed at the proper point.

Claim.—Operating the planting slide and tube V W, by means of

a crank T, receiving its motion from one or both of the carriage wheels A, substantially in the manner described.

Also, the reciprocating frame *x*, or its equivalent, so constructed and operated as to guide the planting tube, and make it deposit the seed in the ground at the desired point, substantially as described.

No. 16,610.—SILAS T. RANDALL, of Rockford, Ill.—*Improvement in Seed Planters*.—Patent dated February 10, 1857.—S S are the handles for operating the machine.

Claim.—In combination with the shoe or spade, composed of the pieces E *f*, the spreading bars H, arranged and operating in the manner and for the purpose substantially as set forth.

No. 16,597.—JACOB EANDES, of Selma, Ohio.—*Improvement in Seed Planters*.—Patent dated February 10, 1857.—The seed falls from the hopper into the pocket *c*, and the slide E moves towards the concave front of cut off G in the direction of arrow 1. If any of the seeds in the pocket should project above the surface of slide E, they will come in contact with the bottom part of G and cause it to oscillate slightly about the point where it is pivoted to *d*; the upper part of G will be thrown forward (see arrow 2) and the lower part backward, (see arrow 3,) so as to present an inclined surface to the projecting seeds. This movement serves to stir the seeds, and at the same time the yielding of the bar *d* pivoted at *d*¹ allows the seeds to pass easily under the cut-off.

The inventor says: I disclaim the making of a seed cut-off with a concave face. I also disclaim the giving of a vertical movement to a cut-off; as both of these features are old.

I *claim* pivoting the cut-off G to the bar *d*, so that the cut-off shall have an oscillating movement, and thus stir the seed when it oscillates, in the manner and for the purposes set forth.

No. 16,592.—REINHOLD BOEKLEN, of Jersey City, New Jersey.—*Improvement in Seed Planters*.—Patent dated February 10, 1857.—Compartment *b* contains the seed, compartment *c* the fertilizer. The implement being thrust into the ground (see fig. 2) and being withdrawn (see fig. 1), deposits the seed, as seen at *a**, and the manure, as seen at *b**, and covers the seed at one and the same operation.

Claim.—The distributor D, having chamber *l* and recesses *g*, and worked between the compartments *b* and *c* by means of the link E and slide C, in combination with the cut-off E¹ and plate F; the whole arranged and operating substantially in the manner and for the purpose set forth.

No. 16,636.—LEONARD ARNOLD, of Janesville, Wisconsin.—*Improvement in Seed Planters*.—Patent dated February 17, 1857.—The rear frame is jointed to the front frame H Q by means of bars G.

Claim.—Employing two frames in constructing the machine, the forward frame resting on the axle of the principal or driving wheels, and the rear frame resting on the axle of the covering wheels, and extending forward and under the forward frame, to which it is jointed,

and acting as a lever in elevating the forward frame, driving-wheels, and ploughs clear from the ground, in turning round and in passing from point to point, substantially as and for the purposes set forth.

No. 16,729.—FIRMAN GOODWIN, of Astoria, New York.—*Improvement in Seed-Planters*.—Patent dated March 3, 1857.—The bars D D, containing the seed apparatus, have at their front and rear ends tenons *c* which fit into grooves in the frame A. The bars D D may be moved laterally any desired distance from each other, and may be secured by pins *d*. As the machine is drawn along, the pin K raises shaft J, the cords *i* actuate the arms H upon the distributing wheels F, and throw the recesses *f* forward so as to allow the seed to drop. When the pin K passes the arms *m m*, the springs I, acting upon cords *i*, throw the shaft J down, and turn the wheels F back to their original position.

Claim.—Arranging the seed hoppers and seed cylinders, and the mechanism which operates the seed cylinders, upon movable bars D, in combination with the double crank J and frame A, in the manner and for the purpose set forth.

No. 16,929.—GEORGE A. MEACHAM, of New York, N. Y.—*Improvement in Seed-Planters*.—Patent dated March 31, 1857.—The planting device of this apparatus is secured to the foot, and the sack A is secured to the waist of the operator. By raising the handle P the operator will cause such an amount of seed to pass down the tube E as has filled the recess *d*; the seed drops into the box F, G G, and, by then pressing down the foot, the boards G G will be forced apart as the elastic straps *e* yield, and the plate I, passing down between the boards G, forces the seed into the ground.

Claim.—1st. The box B, provided with the elastic side *a* and the head C, or its equivalent, for the purpose of distributing or measuring the seed.

2d. The planter attached to the foot of the operator, and formed of the boards F, G G, connected by the elastic straps *e e'*; the boards G G having the plates H H attached to them, and the under side of the board F the plate I attached; the whole being arranged substantially as described, for the purpose of planting and forcing the seed into the soil by the pressure of the foot.

No. 17,145.—GEORGE M. EVANS, of Pittsburg, Pa.—*Improvement in Seed-Planters*.—Patent dated April 28, 1857.—By drawing back or pushing forward the bars K, which are attached to shaft *o* of the wheel H, the frame A of the machine may be raised or lowered, and the depth to which the shoe E shall penetrate the soil may be regulated.

Claim.—So uniting the wheel and guard frame to the leam, and to the rods or bars K, as that the operator may, from his position between the handles of the machine, adjust the depth at which the shoe shall open the furrow by moving said wheel and guard frame forward or back, substantially in the manner and for the purpose explained.

No. 17,305.—CHAS. KETCHUM, of Penn Yan, N Y., assignor to CHAS. G. JUDD, of same place.—*Improvement in Seed-Planters*.—Patent dated May 12, 1857.—By taking hold of the handle P and thrusting the blades B into the ground to the stop x on the blade, by then turning the handle P until the seed cups H come over the seed passages I, the blades B are opened by means of the flat end Q of the rod, and the seed can pass from sack O down between the blades into the ground; on raising the apparatus, the bolts K force the spring blades B together.

Claim.—Blades B, in combination with the bolts K, in the manner and for the purpose set forth.

Also, the adjustable cylinder G, in combination with the band R and sack O, in the manner and for the purpose specified.

No. 17,275.—JNO. HASELTON, of Orford, N. H.—*Improvement in Seed-Planters*.—Patent dated May 12, 1857.—This invention consists in applying to the rear part of a seeding machine the frame F¹ and roller F, for the treble purpose of covering the seed, stopping the operation of seeding, and serving as a rear bearing wheel to transport the machine. The main wheels E, together with the gearing H and I² of the seeding apparatus, can be raised and their motion arrested by raising the handles V, and letting the cross-bar d rest on spring x , and the apparatus can be set in motion again by simply depressing spring x , when the wheels E will again come in contact with the ground.

The inventor says: I do not claim the attachment to seed-planters of a hind or finishing roller to press down the soil over the seed.

But I *claim* the arrangement of roller F and sliding frame F¹, substantially in the manner and for the purpose described.

No, 17,260 —JOHN H. BRUEN, of Penn Yan, N. Y.—*Improvement in Seed-Planters*.—Patent dated May 12, 1857.—The points of the blades C being thrust into the earth, the staff A receives a partial turn by the hand of the operator when the wedge-shaped point D throws open the blades C. Simultaneously with the opening of the blades the disk distributor E drops the seed, which descends through the passages F into the earth as penetrated by blades C. When it is desired to plant a pumpkin seed at intervals within the hill of corn, the operator can drop said pumpkin seed through the tube K, which is independent of the grain seed-planter.

Claim.—The tube K, in combination with the bar H and disk distributor E, arranged and operating in the manner and for the purpose set forth.

No. 17,402.—JESSE WHITEHEAD, of Manchester, Va.—*Improvement in Seed-Planters*.—Patent dated May 26, 1857.—As the machine is drawn along, the distributing plate D is caused to revolve on shaft F, and the seed contained in the hopper passes into the cells of said plate, and passing through the spout H drops to the ground. The spout H is adjusted to such a position that the current of seed is divided, and that the excess will pass down spout G and into box J.

Claim.—The combination of the trough G with its spout H and receptacle J, when used in connexion with a seeding apparatus, for the purpose of dividing and retaining the excess of seed from that which is to be planted, substantially as set forth.

No. 17,450.—SILAS G. RANDALL, of Dixon, Ill.—*Improvement in Seed-Planters.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim—Hinging the seed hopper C with its drive-wheel G, and other appliances connected with it to the side pieces A of the harrow, by the pivoted arms D, so that when said hopper is thrown forward it shall rest on and be operated by said drive-wheel, which runs on the ground for that purpose, and when thrown back rest on said side pieces and be out of action, as herein set forth and explained.

No. 17,568.—SOLOMON T. HOLLY, of Rockford, Ill.—*Improvement in Seed-Planters.*—Patent dated June 16, 1857.—As the machine is drawn along, bevel-pinion E, on the driving shaft, imparts rotary motion to bevel-wheel G, which transmits it, by means of wheel M, to the revolving distributing disk R, which causes the seed in hopper b to pass through apertures g down into the seed tube T. The seed drops down on valve U, which is vibrated by pins r^1 of wheel M coming in contact with the arm S of valve U; and each time the valve is opened, the indicator b^1 is lowered. When the unevenness of the ground or other reasons should require the seed to be discharged at unequal distances, the attendant, by operating lever L and clutch I, releases spring a, and the connexion between the seeding apparatus and driving-wheel is interrupted, and the operator can thus adjust the discharge of the seed at pleasure.

Claim.—The employment or use of the indicator b^1 , connected with the valve U, arranged and operated as shown for the purpose set forth.

No. 18,126.—CYRUS C. ALDRICH, of Faribault, Minn. Terr.—*Improvement in Seed-Planters.*—Patent dated September 8, 1857.—As the machine is drawn over the field, the seed in box G constantly remains at the lower part of said box; and the seed cup i, passing through the seed, becomes filled, and the seed passes down spout H into box I; and as the wheels rotate, and the boards F come in contact with the ground, the plunger c will be forced down, forcing open the flaps b and causing the seed to pass into the furrow.

Claim.—The box I, provided with the plunger c, when said plunger is operated by the lever frame J, arranged as shown and described for the purpose set forth.

No. 18,140.—J. W. ELLS and JAMES CHARLTON, of Pittsburg, Pa.—*Improvement in Seed-Planters.* Patent dated September 8, 1857.—As the machine is drawn over the field, the slide J has a reciprocating motion imparted to it by means of eccentric G, and causes the seed in hopper A to pass through the holes x into the seed tube. The slats t covering, at each operation, two of the holes x, permitting the seed

to pass only through the other two. The object of these slats is to compensate for the inaction of the eccentric at its dead points, during which time the wheel C turns a certain portion before the slide J commences to move.

Claim.—The combination and arrangement of the reciprocating feed slide J with the cut-off slats *t t* and the brush L, in the manner and for the purpose set forth.

No. 18,334.—AARON M. GOULD and ALBERT FLANDERS, of Cambria, New York.—*Improvement in Seed-Planters.*—Patent dated October 6, 1857.—In the drawings, fig. 1 is a side view of this improvement; fig. 2 is a plan or top view of the same. The back end of the frame of the machine is supported by two wheels or rollers, which are placed upon a square shaft or axle E, which extends the whole width of the machine, the shaft or axle having its journals fitted in the lower ends of the adjustable pendants F F attached to the back ends of the curved bar B. The wheels or rollers D D are fitted loosely on the shaft or axle E, and are secured at desired points by keys *b*, seen in fig. 2. H represents a square shaft, the journals of which are fitted in uprights *d*, at the ends of the bar B. The square shaft passes through hoppers J J, and on the shaft and within each hopper a distributing wheel K is placed. These wheels have holes made in their disks in the usual way; and brushes *u*, attached to spring plates *o*, bear against the periphery of the wheels, one on each side, as shown in fig. 3. L represents a hopper, which is secured to the bars A A in precisely the same way as hoppers J J. Two hoppers L are intended to be used, but only one is shown in the drawings.

Claim.—The inventors say: We do not claim adjustable hoppers, irrespective of the arrangement shown; for adjustable hoppers have been previously used.

But we *claim* the described arrangement of shaft H and hoppers, J J and L, with shaft E and rollers D D.

No. 18,344.—C. O. LUCE, of Brandon, Vt.—*Improvement in Seed-Planters*—Patent dated October 6, 1857.—A A in the drawings represent two conveying tubes, the upper ends of which communicate with the lower part of the hopper or seed box; the lower ends are placed directly over the wheels. Neither the hopper nor wheels are shown, as they do not form a part of the invention. The upper ends of tubes A A are attached as shown in fig. 1, and a shaft B passes laterally into each tube. Each shaft, that is the portion of them in the tubes, have four radial plates X attached to them at equal distances apart, as shown in fig. 1.

On the shafts B B cylinders *c c* are placed, one on each. The lower end of a spring plate *d* bears upon the periphery of each cylinder and the edges of their plates *a*, and serves as a cut-off, preventing the seed being crushed between the sides of the tubes and the edges of the plates as the shafts and cylinders rotate. The shafts may be rotated in any proper way from the driving-wheels of the machine.

The inventor says: I am aware that rotating cylinders provided with cells or chambers have been previously used, and form well

known devices for distributing seed; but I am not aware that parts have been arranged as described, whereby the capacity of the seed cells or chambers can be varied with such facility. I therefore do not claim a rotating cylinder or shaft, provided with seed cells or chambers.

But I *claim* the rotating shafts B, provided with the radial plates *a*, and the adjustable or sliding cylinders C, in combination with the elastic or spring cut-offs *d*; the above parts being combined and arranged specifically as and for the purpose set forth.

No. 18,366.—HOSEA WILLARD, of Vergennes, Vt.—*Improvement in Seed-Planters*.—Patent dated October 6, 1857.—The peculiar means employed for distributing seed, or conveying the seed from the hopper and measuring it in suitable quantities before it is dropped into the furrow, are those in which this invention consists.

In operating this improved machine, the seed to be sown is placed within the cylinder D, which, as the machine is drawn along, is rotated and the seed discharged by centrifugal force through the openings *f*, in greater or less quantities, according as the plates *g* are adjusted.

Claim.—The inventor says: I do not claim, separately, a perforated reciprocating slide *i* for distributing seed, for they are in common use.

Neither do I claim a rotating cylinder for distributing seed, when separately considered.

But I *claim* the rotating cylinder D, provided with the taper openings *f*, and the adjustable plates *g*, in combination with the inclined spout E, tube F, and perforated reciprocating slide *i*, when arranged as shown for the purpose specified.

No. 18,333.—W. Y. GILL, of Henderson, Ky.—*Improvement in Seed-Planters*.—Patent dated October 6, 1857.—In this invention, by means of a swinging frame and rollers, furrows can be made of any depth, and the seed delivered at any rate or distance, the whole being under the control of the operator.

The inventor, in stating what he claims, says: I *claim* the lever F attached to the bar D, and having the slides *e* connected to its end by means of the screws *f*, the lever being operated by means of the spring I, and the spring projection *p* on the wheel B¹; the parts being arranged substantially as described for the purpose of distributing or discharging the seed from the hoppers, and regulating or graduating the amount at each discharge as desired.

No. 18,393.—JOSEPH HALL, of Honeycut, Ala.—*Improvement in Seed-Planters*.—Patent dated October 13, 1857.—This invention operates as follows: When the plough is put in motion, the wheel W will, while revolving, give by means of connecting rod H an oscillating motion to the small wheel B; the cogs C D, pressing against the lower end of lever L, will cause the movable bottom M to slide past the lower part of the hopper O, and, when pushed to its extreme end, allow a few cotton or corn seeds to drop through its hollow ends, until the cogs, slipping past the ends of the lever, will cause the bottom of the hopper to close again by the action of the springs S S. The seed

dropping in the lower hopper will be conducted by the tube and deposited in the furrow made by the ploughshare, while the heavy mould-board attached to the stem levels the ridges of earth formed on each side of the furrow and covers up the seed. One revolution of the wheel W causes the movable bottom to open four times.

Claim.—The inventor says: I am aware that a great many seed planting ploughs have been brought into use, and I lay no claim to the originality of the principle of planting seed by a mechanical process.

But I *claim* the lever L, carrying a movable bottom M on its upper end, in combination with the springs S and wheel B; the whole arranged in the manner and for the purpose set forth.

No. 18,450.—P. HINKLEY, of Charleston, Ill.—*Improvement in Seed-Planters.*—Patent dated October 20, 1857.—This invention consists in having the hubs of the distributing wheels connected by universal or compensating joints, and having the wheels placed in a frame, the several frames being pivoted at one end to arms connected to a rock-bar, and the opposite ends resting upon a rock-bar; said rock-bars being operated, an independent vertical movement is allowed each wheel, so that they may conform to the inequalities of the ground, and all the wheels raised simultaneously free from the surface of the ground, when necessary, so that the machine may be drawn from place to place without actuating the distributing devices.

Claim.—The inventor says: I am aware that distributing wheels provided with spouts, and having seed cells formed in their hubs for distributing the seed into the spouts attached to the wheels, have been previously used, the parts being arranged substantially as those shown. I therefore do not claim the distributing wheels, nor do I claim the universal compensating joints *b*.

But I *claim* placing the distributing wheels H in frames F, the front ends of which are pivoted to arms D, attached to the rock-shaft C, and having the back ends of the frames F rest or bear on the rock-shaft E, when the wheels thus arranged are connected by the universal compensating joints *b*, or their equivalents, substantially as and for the purpose set forth.

No. 18,525.—JACOB G. WINGER, of Vicksburg, Miss.—*Improvement in Cotton-Scrapers.*—Patent dated October 27, 1857.—In using this implement, the ridge is scraped on both sides at one operation, and the top of the slope is left with the curved surface *m*. This leaves the top of the ridge in a better condition to sustain the plant than can be effected with a scraper of ordinary construction, either single or double. The inclined plates C rest upon the surface of the ridge, causing the weight of the implement to be effectual in pressing the earth.

The inventor says: I do not claim broadly the construction of cotton-scrapers for acting on both sides of the ridge at a single operation.

But I *claim* the longitudinally adjustable cutters C C, having each an inclined vertical and curved portion as described, in combination with mould-board, supports and frame, substantially as set forth.

No. 18,716 — L. F. WARD, of Marathon, N. Y.—*Improvement in Seed-Planters*.—Patent dated November 24, 1857.—The nature of this invention and improvements in seed-planters consists in the arrangement of scrapers to gather the earth and draw it over the deposits of seed, and then rise automatically, and leave the earth in a hill upon the seed; and after passing the hill over the deposit of seed, to descend again and gather the earth and draw it over the next deposit of seed, and leave it in the same manner; the devices for raising and lowering the scrapers being operated by the wheel on which the machine travels. Also in arranging two slides in the seed-boxes, one above the other, and operating them alternately, so as to hold and deliver the seed as required.

The inventor says: I *claim*, 1st. The covering scrapers *q q*, in combination with the pressing rollers *z z*, when constructed and operated as described.

2d. I claim in combination with the furrowing teeth *e e*, arranged to traverse perpendicularly the bar *g*, standard *h*, springs *m m*, and locking latch *k*, for raising, lowering, and holding the furrowing teeth in the required position, as described.

3d. I also claim the arrangement of the traverse rod *N*, links *o o*, and springs *L L*, for the purpose of operating the slides *J J*, as described.

No. 18,717.—CALEB B. WINDER, of North Lewisburg, Ohio.—*Improvement in Seed-Planters*.—Patent dated November 24, 1857.—In this invention the seed-box is made in the form shown in the engraving, with an inclined front, so as to deliver the seed to the rollers or wheels, as long as a kernel remains. This box is provided with a partition *U*, so as to plant seed and deposit some kind of fertilizer with it, or plant two kinds of seed, either in the same or alternate hills, by changing the position of one of the rollers, so as to bring the scores in it opposite the space in the other. Pieces of leather *V V* are fastened to the rear corners of the pieces *Q Q*, to prevent the seed from being spilled over outside of the rollers. The pieces *a a* are fastened to the beam behind the rollers, and those upper surfaces *b b* incline diagonally, so as to catch any seed which is carried over by the roller, and deliver it to the roller again, so that it is carried around into the seed-box.

Claim.—The inventor says: 1st. I *claim* the inclined planes arranged to catch the seed carried or thrown over by the roller, and deliver it to the roller again, so that it will carry it back to the seed-box, as described.

2d. I claim connecting the draught-rod to the beam at the rear of or behind the wheel, in combination with the clevis yoke or staple, which allows it to vibrate, as described.

No. 18,772.—JOHN ROBINSON, of Eli, Sharpsstown, Md.—*Improvement in Seed-Planters*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I *claim*, 1st. Regulating the quantity of earth deposited over and adjacent to the seed, by means of adjustable

stops *d*, when used in connexion with the curved arms *G*¹, lifting arms *E*, and adjustable strap *K*, in connexion with the adjustable coverer *k*; the whole constructed and operating as and for the purpose set forth.

2d. The combined arrangement of the vibrating box *I*, lifting arm *F*, adjustable strap *k*, and adjustable stop *d*; the whole operating as and for the purpose set forth.

No. 18,762.—DANIEL B. NEAL, of Mount Gilead, Ohio.—*Improvement in Seed-Planters*.—Patent dated December 1, 1857.—*M* is a cross-bar which is attached to the bar *D*; said bar running forward serves to carry motion from the driving-wheels to the slides *i*, and the seed distributing box *n* is a slot in a plate attached to bar *D*, into which the cam *h* on the driving-wheel enters; by throwing the bar in the position it now occupies, so that the cam will not act in the slot, the driving-wheel will not operate the slides *i*; and the distributing bar *C*, seen in figures 2 and 3; *J* is a rod having a handle *H* attached to it, said rod *J*, being attached to the bar *D*, serves to operate it when not operated by the cam on the driving-wheel; *p* is a roller in the forward end of bar *D*; said roller, resting on the frame of the machine, serves to prevent friction, and thus render the machine capable of hand operation.

The inventor says: I do not claim that any of the members of my machine are new; nor do I claim to have been the first who has dropped the grain at pleasure of the operator in a power planter. But I claim the peculiar arrangement of handle *H*, rod *J*, bars *D* *M* and *C*, slides *i*, and lever *c*, when used in the manner and for the purpose described.

No. 18,821.—JOEL LEE, of Galesburg, Ill.—*Improvement in Seed-Planters*.—Patent dated December 8, 1857.—*C* is the swivel spout, said spout being secured to the bottom of the seed distributor at one end in such a manner as to allow it to swivel around in any direction which may be desirable; *D* *D*¹ are two bevel wheels secured to the other end of the swivel spout, said wheels being bevelled on the inside and secured to the spout in such a manner that their edges will meet in front of the swivel spout at the point where it is desirable for them to cut and part the earth when the machine to which they are attached is in operation.

Claim.—The bevel wheels *D* *D*, constructed, arranged, and operated in the manner set forth, when combined with the swivel tube *C*, for the purpose described.

No. 18,802.—JAMES CARROLL, of Laporte, Ohio.—*Improvement in Seed-Planters*.—Patent dated December 8, 1857.—The nature of this invention consists in the employment of the handle *B*, furnished with a discharge passage, in combination with a slide *f*, which has a hand trigger *n*, and with the peculiar conducting tube *A* *c*, which is furnished with the shares *a* *a*. The whole has for its object the ready adjustment of the distributing device, whereby a greater or less quantity of seed, as desired, may be measured and dropped from the hopper into hills or drills.

Claim.—The employment of the handle B, furnished with a discharge passage, in combination with a slide *f*, which has a hand trigger *n*, and with the peculiar conducting tube A, which is furnished with shares *a a*, substantially as set forth.

No. 18,999.—L. F. WARD, of Marathon, N. Y.—*Improvement in Seed-Planters.*—Patent dated December 29, 1857.—The plunger G and lever H are drawn up by the spiral spring *k* fastened to the pin I and the top of the seed box F for that purpose; the fulcrum of the lever H is fastened in the standard L, and it vibrates in the bracket M, which extends up as high as the side of the seed-box, so as to allow the lever to be raised and let the marking cogs J pass in backing the machine; and as the lever H simply lies on the pin I, the plunger is not moved by the lever in backing the machine.

Claim.—The combination of devices for operating the plunger to deposit the seed automatically, consisting of the marking cogs J, the lever H, pins I, and spring *k*, constructed and arranged as described.

No. 18,843.—JOSEPH C. HAINES, of Dublin, Ind.—*Improvement in Tubes for Seed-Planters.*—Patent dated December 15, 1857.—A is the chute that conducts from the seed-box, or hopper, through the frame F, to the tube I. H is the drill-tooth secured by the drag bar X and tackle K to the frame in the customary manner.

The tube I is constructed of a close and slightly tapering coil of wire, attached by its base to the frame, and depending thence in a slightly forward direction, so as to occupy the interior of the drill-tooth H in the usual way.

Claim.—As new, and of my invention, in the described combination with the tooth of a grain or seed drill, the tube or grain duct I, composed of a close coil of wire constructed and applied as set forth.

No. 17,462.—J. D. WILLOUGHBY, of Pleasant Hall, Pa.—*Improved Plough Clevis.*—Patent dated June 2, 1857.—This clevis or draught rod is attached to the under side of the front end of the plough beam. When forward motion is applied to the clevis, the button C, figure 1, presses against the rear end of the India rubber spring *a*, and forces the front end of said spring against the bolts *f*, figure 5; when the plough strikes a rock or any other obstruction, the India rubber spring will compensate the stroke, thus preventing injury to the plough or horses.

Claim.—The stem B and button C, with the grooves E, in combination with cylinder B and its elevation *i*, the whole being arranged and operated in the manner and for the purpose substantially as described.

No. 18,594.—W. W. MERRIAM, of Oswego, N. Y.—*Improvement in Patterns for Cutting out the Uppers of Boots and Shoes.*—Patent dated November 10, 1857.—The nature of this invention consists in making patterns adjustable independently in different directions, thus affording the means of adapting said patterns to the various sizes, as well as to various proportions of the same size of the thing or pattern to be cut.

In section II, figure 1 represents the pattern of a boot leg; figure 2 represents the same pattern, exposing the adjustable sliding plates in their most contracted positions; figure 3 represents the pattern, showing the sliding plates in their most expanded position.

The inventor says: I do not lay any claim to the extension pattern, which can be operated in such manner as to produce the various sizes of patterns.

But I *claim* the method described of operating the sliding parts of an extension pattern, so as not only to adjust the same to different sizes, but also to change the proportions of the several sizes at pleasure, without regard to the whole, as set forth.

No. 18,596.—HENRY MOESER, of Pittsburg, Pennsylvania.—*Improvement in Ploughing-Machines*.—Patent dated November 10, 1857.—After a plough is set into the ground, (at the pulleys J J,) the plough carriage, as it moves along, gets under the guiding rail N, so that the forks *ff* branch up on both sides of the rail, whereby the carriage is guided as it continues its motion; near the pulleys J¹ J¹ the forks leave the guiding rail, and the carriage, after being lifted from the ground and returning back, passes above and clear of the guiding rail. The forks are cut out sufficiently to allow the plough carriage to rise or sink, according to any unevenness in the surface to be ploughed.

The engine, when set in motion, communicates, by the pinion *b*, wheel *m*, pinions *o o*, and wheels P P, and driving pulleys K K, a continuous circuitous motion to the endless chains H H, and thus to the ploughs attached thereto, in the direction of the arrows; the ploughs will set into the ground at the pulleys J J, and be lifted out of the ground at J¹ J¹, from where they return (above the ground) back to the pulleys J J again.

Claim.—The inventor says: I do not claim, broadly, the operating of a gang of ploughs on an endless chain, transversely or obliquely to the line of draught.

But I *claim*, first. The arrangement and combination of the transverse beam F, connecting links *a a*, chains H H, driving pulleys K K, pulleys J J¹, and wheels G G, or any other equivalent devices, when operating in relation to each other and to the steam carriage, as set forth and for the purpose described.

Second. The arrangement of the guiding-bar N, supported on the transverse beam F, and the forks *ff*, on the plough carriages, or any other arrangement substantially the same, for the purpose of guiding the plough carriages, as described.

No. 16,901.—ELLIOT ANDRUS, of Geneva, N. Y.—*Improvement in Ploughs*.—Patent dated March 31, 1857.—As the plough is drawn forward the cam wheel W will revolve, bringing the cams *a*, *a*¹, *a*², *a*³, *a*⁴, *a*⁵, in contact with the friction roller *b*, in the mould-board B, giving it an oscillating motion, by which means the wedging of the mould-board under the furrow is relieved, lessening the draught and leaving the furrow in a porous condition.

The inventor says: I do not claim the invention of the plough, nor the iron beam, mould-board, or shear.

Neither do I claim the cam wheel.

But I *claim* the frame E E', for the purpose of holding the mould-board B, attaching the handle P', and supporting the end of the wheel-shaft s.

I also claim the manner of attaching the mould-board upon pivot points, in combination with the lock d d' and links L L'.

I also claim the combination of the wheel W, cams a, a', a², a³, a', a⁵, and friction roller b, or their equivalents, to produce the oscillating motion of the mould-board, in the manner and for the purpose substantially as described.

No. 17,211.—THOMAS C GARLINGTON, of Lafayette, Ala.—*Improvement in Ploughs*.—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of headed slide g, strap i, brace D, and key n, constructed, arranged, and operated as described, for performing the double function of bracing the beam and stock, and securing the mould-board to the stock.

No. 17,476.—JOHN ORMISTON, of Center Township, O., assignor to D. N. ALLARD, of Rokeby, O.—*Improvement in Ploughs*.—Patent dated June 2, 1857.—When the point D has worn off its lower side, the screw bolt g is loosened, and the stirrup d can be removed; the point D can now be withdrawn to the rear, and turned so as to bring the worn off edge upward. Should the point D wear off in such a manner as to be shortened, it can easily be advanced the length of one or more teeth as desired.

Claim.—Uniting and adjusting the shank of the point D to and with the shank of the coulter E by means of the head on said piece D, the rack on the shank of said coulters, and the stirrup and set screw, substantially in the manner and for the purpose set forth.

No. 17,430.—JOHN S. HALL, of West Manchester, Pa.—*Improvement in Ploughs*.—Patent dated June 2, 1857.—The slots i are so formed in the land side top that any draught exerted upon beam C in a horizontal line has little or no tendency to slip the bolts a b in their slots i, as all strain is brought indirectly upon the side of said slots i.

Claim.—Vibrating the beam in a circular bearing in the land side, together with the oblique adjusting and securing slots i i, the whole combined and arranged substantially as described, whereby the draught end of the beam may be vertically adjusted, and the beam so secured to the land side as that it is impossible for the former to slip.

No. 17,577.—CHARLES B. INGERSOLL, of Morris, Ill.—*Improvement in Ploughs*.—Patent dated June 16, 1857.—By forming a clear open space between the supports A¹ and A², and having only the land side to come in contact with the soil, the chocking and clogging while ploughing in loose wet lands are avoided.

Claim.—Standard A in combination with the standard arms A¹ A² and shear bar E, constructed and arranged in the manner and for the purpose set forth.

No. 17,579.—ERASMUS D. LEGG and LEANDER W. LEGG, of Speedsville, N. Y.—*Improvement in Ploughs*.—Patent dated June 16, 1857.—In using this plough, the wing C is made to rest on the hinged mould-board F, and both are held stationary by hook *m*, passing through ring *n*; the other wing C remains in its rest *a* until it is to be used. When the mould-board F is turned to one or the other side of the plough on its bearings *x*, the cutter G must be moved correspondingly; which motion is effected by turning lever O on its fulcrum *y*, which will move the cutter G in its dovetailed plate *i*.

Claim.—The combination of the adjustable cutter and the reversible mould-board, when operated substantially in the manner and for the purpose fully set forth and described.

No. 18,335.—MANASSAH GROVER, of Clyde, Ohio.—*Improvement in Ploughs*.—Patent dated October 6, 1857.—The nature of this invention consists in constructing ploughs in such a manner as, when in the act of ploughing, to ascend and descend freely, corresponding with the surface of the earth, ploughing a uniform depth, however uneven it may be, without any exertion being made by the person using it to produce such an effect, while at the same time the beam keeps its same or relative position; the remainder of the plough being allowed to act or work up or down freely on a hinged joint, made for the purpose, nearly at the bottom and on the inside of the plough, by reason of a forked bar extending from the hinged joint up to the beam of the plough, and fastened firmly to it, and being so arranged and constructed as not to be allowed to move or sway in a lateral direction.

The inventor *claims* the combination of hinged forked bar B and beam A with the segmental bar D, and the adjustable lever E with its roller J; the whole arranged and operating substantially as and for the purpose set forth.

No. 18,355.—THOMAS SHARP, of Nashville, Tenn.—*Improvement in Ploughs*.—Patent dated October 6, 1857.—This improvement consists in the peculiar means employed for regulating or adjusting the line of draught for a plough relatively to its share, whereby the depth of the furrow, as well as the width, may be regulated.

In the drawings, F is the beam, which is constructed of an iron tube, bent or curved, similar to the ordinary wooden beams, as shown in fig. 1. The beam has an eye *b*, secured in its outer end, to which the draught chain, whiffle-tree, or splinter bar is secured. The beam rests on a concave *c*, in the upper surface of a metal block *d*, on the inner surface of which a semi-sphere *e* is formed. The semi-sphere is fitted in a corresponding shaped recess made in the upper surface of the standard, as seen in figs. 1 and 3. Through the upper parts of standard E two bolts *g* and *n* pass, said bolts having eyes or rings *i* and *j* on their upper ends, through which the beam passes; and the beam is secured firmly upon the block, and the semi-spherical portion of said block is secured firmly in the recess by screwing the nuts *k* of the bolts in fig. 1.

Claim.—The inventor says: I do not claim a hollow or tubular iron beam, for they have been previously used, but, so far as I am

aware, for lightness and strength only, without reference to any particular mode of attaching the beam to the plough with the view to the adjustment of the line of draught with the share.

I *claim* attaching the beam F to the plough, substantially as shown, or in any equivalent way which will admit of the turning of the beam for the purpose of adjusting the draught hook or eye *b*, both laterally and vertically, as set forth.

No. 18,463.—C. B. MAGRUDER, of Thomasville, Ga.—*Improvement in Ploughs*.—Patent dated October 20, 1857.—In engraving, fig. 2, A is the beam; B the handles; C the side beams; C' the sliding arms passing through the beam A, and which are adjusted to the bolts *a*; D is the adjustable polygonal plates; E the foot with shoe on it; D^a the foot for the first shovel; *b* the taps or nuts for tightening the screws. In the operation of this invention, the main beam A and centre foot attached is so constructed that it may be used as a single plough; then, by means of the polygonal plates and adjusting sliding arm, one, two, or more ploughs or shovels can be attached to the same stock.

The inventor says: I *claim* the polygonal plate D, in combination with the arm C and beam A, in the manner and for the purposes set forth.

No. 18,475.—DAVID K. THOM, of Farmington, Tenn.—*Improvement in Ploughs*.—Patent dated October 20, 1857.—In the engraving, figure 1 presents a perspective view of the machine, and A the scraper, being a metal plate placed horizontally upon the mould-board, and from six to eight inches wide and from twelve to eighteen inches long, with its left and front end B turning forward from one to one and a half inches parallel with the beam of the plough, or the bar of the share, its lower front edge C being turned nearly horizontal. D and E are two parallel grooves running lengthwise on the scraper; said scraper is attached to the plough by means of the square stem and flat head screw K passing through the groove E, and the oblong hole F in the mould-board, fastened behind with a nut or screw G, and the loop H passing round the screw rod and through the groove D, and flattened on the outer end. The scraper is adjustable at pleasure, by slackening the screw attached at G behind the groove E.

Claim.—Combining with the ordinary turning plough an adjustable scraper A A, adjustable laterally and perpendicularly, as described.

No. 18,480.—NOAH WARLICK, of Lafayette, Ala.—*Improvement in Ploughs*.—Patent dated October 20, 1857.—In the engraving, F is the foot of the plough, and B B' the braces by which it is secured to the beam A. This attachment is effected by bolts *a a'* passing through braces and beam. The head of the rear brace B has a slot *b*, through which bolt *a* passes, as shown. This gives a lateral adjustment of the plough point, regulating the width of furrow slice.

The face of the plough foot is adapted to the reception of either the shovel or turn mould-board, in the following manner: The general surface of the face is inclined for the reception of the turn mould-board M, as indicated by lines $o\ o^1\ o^2$ of detached views X Y Z; these views being sections on lines $x\ y\ z$. This surface is notched, as shown at f , and the triangular portion $e\ d\ i$ cut away, so as to leave a flat bearing for the shovel s , which rests upon this surface and on the corner p , its head bearing against the notch f . By this construction the stock readily receives the shovel; and, when required for a turn mould-board, the inclined surface receives it, the notch f not interfering with the bearing.

The inventor says: I *claim* the double-faced plough stock, constructed, arranged, and operating substantially as and for the purpose set forth.

No. 18,459.—JOHN S. LASH, of Carlisle, Pa.—*Improvement in Ploughs*.—Patent dated October 20, 1857.—The inventor, in describing his improved plough, says: A represents the plough beam, and B the clevis, both made in the usual form. C is the spring, made preferably flat and of wood, and arranged on the top of the beam on account of cheapness, and so that it can be easily replaced if broken. In this, in connexion with the increased and constant action of my spring, lies the utility and advantage of my invention. D is the elbow lever; it is arranged on a pivot a in slot b , cut vertically in the underside of the beam. This lever is connected by one of its arms to the loose end of the spring, which works up through the hole c in the beam by rod d , and by its other arm to the draught rod E.

The inventor says: I do not claim the attachment of the draught rod to a spring, irrespective of the arrangement and manner of applying the spring.

I *claim* the arrangement of the long, flat, and straight spring C on top of the beam, and the combination of the same, thus arranged with the draught rod E, by means of the elbow lever, substantially as and for the purposes described.

No. 18,609.—HORATIO STANLEY, of Erie county, Pa.—*Improvement in Ploughs*.—Patent dated November 10, 1857.—Between the frame piece H and E are hung four or more rollers L K I and J. These rollers diminish in length from I to L, and have concave surfaces, as shown in the engraving, and one so hung in the frame, by means of journals 1 2 3 4, that the concave surface of the rollers corresponds with the required curve of the mould-board, so as to turn over the sward in the same manner as it is now done by a common plough. Any number of ploughs can be conveniently suspended on the axletree B B, thus making a gang plough.

Claim.—The construction of the plough frame, with the rollers, as described, and so constructed that any number may be attached to the same axletree by means of the frame, fig. 2, constructed as described, or any other substantially the same.

No. 18,682.—JAMES G. CUMMINGS, of Columbus, Miss.—*Improvement in Ploughs*.—Patent dated November 24, 1857.—Letter A is a lateral expansion of the standard of the plough, provided with bolt holes B, and this expansion of the standard is made solid with the land side. The nose C of the plough is provided with a vertical groove D, and on each of the cutters and mould-boards to be attached there is a flange E, with bolts and holes to correspond with the bolt holes in the expansion A, and also a projection F, provided with a tongue H, which fits the groove D. By this arrangement one plough frame may be made to answer for a variety of operations.

The second part of this invention consists in a mode of adjusting the mould-board so as to vary its angle, as follows: The heel of the land side is provided with a screw-bolt K, which passes through the heel-post, and has a nut L on its projecting end M. Above and below the bolt are set screws K J S, which pass through the heel-post, and their ends abut against the land side, and by varying the set of these three screws, a variety of positions can be given to the land side, and thus the inclination of the mould-board altered to suit the various kinds of soil.

Claim.—The inventor says: I *claim* the mode of making the plough standard to carry the variety of cutters and mould-boards, the same consisting in the expansion of the standard at the point A, in combination with the groove in the nose of the plough, as set forth.

I also claim the compound adjustment of the mould-board by the three set screws K J S, operating upon the heel of the land side, as set forth.

No. 18,776.—WILLIAM W. SKINNER, of Davenport, Iowa.—*Improvement in Ploughs*.—Patent dated December 1, 1857.—At the back end of the land side there is a cast iron friction-wheel M, which is on a pivot in a crotch marked N, which is attached to the land side by screw bolts marked O. This friction-wheel is placed upon a bevel, depressed on the outer surface, and the plane of the wheel is parallel to the cut of the sod.

When the lever T is depressed, the front wheels can be at right angles under the beam G, and the plough turned within its own length.

The lift of the plough is regulated by the holes at the upper end of standard W. The lever is kept in position by the spring X and standard or radiating bar Y, which is secured to beam G by one screw bolt. The driver's seat Z is set upon iron standards, fixed at one end to the beam.

The inventor says: I do not claim the rolling cutter, the use of the front wheels, the lever, beam, and ploughshare, the rod mould-board, or any of the described parts, except as shown and set forth.

But I *claim* the mould-board B E, B E, B E, friction-roller M, rotary cutter a, wheels p, adjusting lever T, and seat Z, when combined and arranged and operated in the manner and for the purpose set forth.

No. 18,750.—JOHN LANE, Jr. of Lockport, Ill.—*Improvement in Ploughs*.—Patent dated December 1, 1857.—Letter A represents the

land side bar; E, the taper point; F, the inclined flanch projecting nearly at right angles from the upper edge of the land side bar, underneath the mould-board and lay; B, the mould-board; C, the lay; D, the long taper socket on the lay; G G¹, the brace and coupling iron made in one piece; H, the steel land side facing.

Claim—The rigid foundation or frame, when constructed with a taper point and inclined flanch, which projects nearly at right angles from the land side of the plough, underneath the mould-board and lay for use, in combination with a yielding mould-board, a yielding steel lay which has a complete taper socket at its point, and with a steel land side facing, substantially as and for the purpose set forth.

No. 18,726.—JOSEPH BANKS, of Dadeville, Ala.—*Improvement in Ploughs*.—Patent dated December 1, 1857.—The coulter I has two branches *f g* at the bottom. The rear branch *f* rests in a notch formed in the upper side of the point L, toward its upper end; while the fore branch *g* passes down in a notch in the edge of the point, and thence bends under and hooks into a depression in the bottom of the point, as represented in the engravings. The shank of the coulter extends up through a long mortise in the beam, and is held therein by wedges *m* and *n* driven into the mortises, respectively against both edges of the shank. Thus the coulter both bears upon the upper side and lifts against the under side of the point, thereby giving it firmness and steadiness, and holding its ring or opposite edge strongly to the strain to which it is subjected.

Claim.—The arrangement of the double branch coulter I, so that its rear branch rests on the point or share, and its forward branch supports the under side of said point, in combination with the vertical and forward and rear adjustments of the coulter in the beam, in the manner and for the purpose specified.

No. 18,783.—ROBERT B. WINSTON, of Richmond, Va.—*Improvement in Ploughs*.—Patent dated December 1, 1857.—The beam, it will be seen by referring to the engravings, to the land side of the plough, stands out from the plough abruptly, and then runs to its end in the direct line of draught; the end of the beam, however great the divergency at the point X, must be in a line with the point E. The beam and land side are made in one piece for the sake of strength as well as economy. The bolts *o o* pass through stay *i*, handles B, and into the metal of the land side, for the purpose of holding the handles in their places; *a* is a mortise projection, for the purpose of holding the ends of the handles.

Claim.—The construction of the beam, as described, in combination with the land side, when the said beam is cast in one piece with the land side, in the manner described and for the purpose set forth.

No. 18,820.—JOEL LEE, of Galesburg, Ill.—*Improvement in Ploughs*.—Patent dated December 8, 1857.—When this improved plough is in motion, the wheels follow in line after or with the plough; but when the plough changes direction at the end of the row, and turns to the land side, the wheels E and E¹ swivel around and stand at right

angles with the beam, thus allowing the plough to move freely around. Wheel E¹ acts, while revolving in the furrow, as a brace for the land side of the plough. The rear end of the mould-board, being along the ground when the plough is in motion, will have a tendency to crowd constantly toward the land side; hence the necessity of having the swivel wheel E¹ stationary, when the rear of the plough crowds to the left.

Claim.—The combination and arrangement of the two wheels E and E¹, attached to the different sections of the beam, swiveling quarter around in opposite directions, and bracing the plough as described, when used in the manner and for the purpose set forth.

No. 18,803.—JARVIS CASE, of Springfield, Ill.—*Improvement in Ploughs*.—Patent dated December 8, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I claim hinging the tongue to the beam of a plough, and extending a lever or lever seat from one to the other, so that the driver mounted on the plough may, by said lever, throw the plough or ploughs out of the ground, as set forth.

I also claim supporting the front of the beam on the centre of an axle *c*, supported in wheels *c c*, so that said beam may be raised or lowered on said axle, but not affected by the passing of said wheels over the rough ground, as set forth and explained.

No. 18,825.—R. S. STENTON, of New York, N. Y.—*Improvement in Ploughs*.—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Uniting two or more ploughs by an intermediate share, in the manner and for the purposes set forth; said share commencing at or near the point of the plough A, and extending backwards in the direction of the sole of the land side of said plough, and receding obliquely at or about the angle of the share of said plough, until it meets the share of plough B, all substantially in the manner set forth.

No. 17,212.—JACKSON GRHAM, of Bairdstown, Ga.—*Improvement in the Construction of Ploughs*.—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The foot-piece B having a box *a* at its upper end and the two flanches *b b* at its lower end, as shown, for the purpose of securing the foot-piece to the beam, and the lower end of the brace C to the foot-piece, as shown and described.

No. 17,777.—GEORGE G. BLACK, of Crossinville, O.—*Improvement in Cultivator Ploughs*.—Patent dated July 14, 1857.—By turning the link screw *h* and the bar *m* the scrapers *n* may be adjusted to throw the required quantity of earth about the growing crop being cultivated, the beams traversing on the rod *l*.

Claim.—In double ploughs, with two beams joined at the clevis and made to be adjusted to rows of crops of different widths, the rod *l* ar-

ranged between the beams and provided with a cross-bar *t*, upon which the beams can vibrate when the ploughs are adjusted, as described.

No. 18,600.—EZRA PECK, of Deer Park, N. Y.—*Improvement in Digging Ploughs*.—Patent dated November 10, 1857.—The nature of this invention consists of carved teeth attached to a rolling cylinder in combination with a horizontal share travelling beneath the surface set and acting both to loosen the under part of the soil, and also act as a resistance to insure the teeth of said cylinder passing into the earth. In the engravings, 7 is a horizontal share on the plough or coulter *g*, which coulter is attached by a bolt to the beam *h*, and extends upwards to the connecting rod *i*, which is provided with a latch taking an opening in the bar *ll*.

The inventor says: I wish it to be understood that I do not claim a rolling cylinder with either straight or curved teeth, as this has before been used; but I am not aware of any tooth having before been constructed and shaped in the manner shown, so as to enter the earth with only a very small expenditure of power as the cylinder progresses.

I claim the coulter *g* and its horizontal share 7, in combination with the cylinder *k* of teeth *l*, the whole constructed and acting substantially as specified.

No. 16,912.—JESSE FRYE, of Springfield, Ill.—*Improvement in Gang Ploughs*.—Patent dated March 31, 1857.—The conductor on his seat *Y*, by turning hand-lever *S*, which is connected with lever *R**, fig. 2, can turn said lever *R** on its fulcrum *q*; which movement will cause the bar *T* to move in a parallel direction from or to the bar *I*, thereby altering the direction of the ploughs *y z*, thus altering the width of the furrow. By turning lever *X* the upright *O* hinged to frame *K* will be turned on its hinge, thereby altering the course of wheel *N*, and consequently the direction of the plough. By operating lever *V* the rear end of beam *H*, and consequently the rear end of the ploughs, can be raised. By operating the cranks *e*, the front part of the plough can be raised as illustrated in fig. 1.

Claim.—The so hanging of a gang or series of ploughs upon their stock and beam as that the conductor upon his seat, may, by a system of hand-levers and connecting rods substantially such as set forth, adjust said series of ploughs to any desired depth or width of furrow, as set forth.

No. 17,591.—JOSEPH SUTTER, of St. Louis county, Mo.—*Improvement in Gang Ploughs*.—Patent dated June 16, 1857.—By turning pinion *F* so as to throw rack *E* forward, the points *O* of the ploughs *D* are made to dip and enter the ground; and by turning the pinion in an opposite direction, the points of the ploughs are elevated so as to emerge from the ground.

Claim.—The combination of the ploughs *D* with the frame *B* and pivot *O*, arranged and operated in the manner and for the purpose set forth.

No. 18,343.—SAMUEL L. KINGSTON and DAVID GORE, of Plainview, Ill.—*Improvement in Gang Ploughs*.—Patent dated October 6, 1857.—This improvement is intended to surmount the difficulties that usually attend gang ploughs, by allowing them a vertical and lateral adjustment, and also to permit the shares, independently of the frame, to ride over obstructions. By this invention, the plough is also provided with rotating coulters and a swivel wheel by which it may be guided.

The inventors say : We are aware that series of shares have been arranged in gang ploughs so that they could be adjusted vertically or laterally, and we therefore do not claim a series of shares thus arranged, irrespective of the means employed for operating them. Neither do we claim a swivel wheel for guiding and turning the machine, irrespective of the manner in which it is arranged and applied to the machine. Nor do we claim a rotary coulter simply.

But we *claim*, 1st. Attaching the bar F to the bars A by means of the lever D and arm G, and having the ends of the bars K connected by chains *m* to arms *n*, connected to a bar L, to which a lever L¹ is attached; the lever O being attached to one end of the bar A and to the rod *q*, as shown, and the screw rod V attached to the bar B, and passing through the bar *q*, whereby the shares may be adjusted vertically and laterally, and also raised temporarily when necessary, as shown and described.

2d. We claim a mould-board, constructed of conical wire rollers X¹ X¹, arranged as shown, or in an equivalent way, for the purpose of raising and turning the sward, as set forth.

No. 18,397.—GEORGE W. HILDRETH, of Lockport, N. Y.—*Improvement in Gang Ploughs*.—Patent dated October 13, 1857.—The nature of this invention consists in the construction of the forward axletree *h h*, bolster plates D, and centre bolt or pivot *i*, so as to allow a compound or triple motion of the axletree, by which the cranks and wheels are elevated or depressed at pleasure, the wheels set to run further to the right or left, and the axle to vibrate on the centre bolt *g*.

The inventor says : I do not claim the arranging of ploughs in a gang so as to turn several furrows at the same time, nor the carrying it on wheels changeable in height.

But I do *claim* the axletree having a triple motion, in combination with the centre bolt and bolster plate, constructed and arranged substantially in the manner and for the purposes set forth.

No. 18,698.—JOEL LEE, of Galesburg, Ill.—*Improvement in Gang Ploughs*.—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says : I *claim*, 1st. The peculiar arrangement consisting of the friction-wheels *d*, inclined planes *f g*, and lever K, for adjusting the plough frame to any required position, as set forth.

2d. The peculiar arrangement consisting of the flange or guard *e* and pivoted axle *a a'*, for allowing the turning of the front truck to a position at right angles, or nearly so, to the hind truck, so that the machine may turn a square corner without liability of lifting the plough shares out of the ground, as set forth.

No. 18,749.—EDWARD C. JONES, of Pittsburg, Pa.—*Improvement in Gang Ploughs*.—Patent dated December 1, 1857.—The nature of this invention consists in coupling the ploughs constituting a gang to a front and back bar hung to the back end of a steam carriage in such a manner that the said bars can be raised or lowered at their ends by means of rack rods, levers, and other equivalent means, for the purpose of adjusting the depth of the furrows cut by the ploughs; and in connecting further the whole gang of ploughs with the steam carriage, so that the position of the same adapts itself to the undulations in the surface of the ground to be ploughed.

Claim.—1st. The arrangement of the hinged beam C C and springs D D¹, or any equivalent device therefor, when constructed and operating substantially as described.

2d. The coupling of the ploughs to a front bar G and back bar H, as described, which bars can be raised or lowered by means of the rack rods E E¹ and segment levers F F¹, or any equivalent means in their place, substantially in the manner and for the purpose set forth.

No. 18,336.—ANCIL J. HARDIN, of Shelby, N. C.—*Improvement in Hill-side Ploughs*—Patent dated October 6, 1857.—In this improvement the handles are two bars of iron, one inch and a half thick and three feet long, marked H H, fastened by the bolt M through beam A, near the conjunction of C with A. The handles are held apart, at a proper distance, by two iron rods. The front rod, marked I, is set backward in the middle so as to form a shoulder on each side of spring G, and thus prevent the handles from passing to the right or left side. When the rod I is raised to the upper end of spring G, so as to catch the curve T, the plough is ready for use; and, by pressing the spring forward with the hand or foot, so as to allow the rod I to pass from curve T towards the other end of the spring, and at the same time turning over the whole plough and raising up the handles so as to let rod I catch in curve T of the upper end of the spring, the plough is again ready for use. Between the end of the handles and the rod I is another rod V, which serves to prevent the handles from being bent together. The back end of the handles is forked so as to form a set of handles to hold with, either side of the plough being up.

The inventor says: I *claim* the arrangement of spring G with relation to handle H and beam A, in the manner and for the purpose described.

No. 16,913.—JESSE FRYE, of Springfield, Ill.—*Improvement in Prairie Ploughs*—Patent dated March 31, 1857.—The driver, on seat Z, can direct the course of this plough by operating the hand-lever E, which, by the connecting rod D, causes the standard M, which supports one end of the shaft T, to swing on its hinge a, thus to change the position of shaft T, and, consequently, the direction of the plough. By turning lever I of the sector G, the cam P is raised or lowered; and as the circular face of said cam supports the front end of beam A, the front part of plough K can consequently be raised or lowered by means of said lever. The rear end of the plough can be raised or lowered by means of lever J, the short end m of which moves on the

incline U; and the beam B is consequently raised or lowered by operating lever J, and consequently the rear end of the plough K, which is attached to it. The bearings of the rollers *e*, F, *g*, may be adjusted by causing the movable shield P to turn on its pivoted point; and the end *k* of said shield, figure 1, can be caused to travel in a circular groove *d'*, and can thus be adjusted to any desired point.

Claim.—1st. Supporting the after end of the plough beam A upon a vertical journal at the left hand end of the axle T, when the bearings at the opposite end of said axle are so arranged that the position thereof may be varied and adjusted, substantially in the manner and for the purpose set forth.

2d. Also arranging the bearings of the rollers *e e e f* and *g g g*, in such a manner that their positions may be varied and adjusted, substantially in the manner and for the purpose set forth.

3d. In combination with the mould-board, composed principally of the series of adjustable rollers, as set forth, I also claim the adjustable triangular plate *w*, for the purpose of making the whole conform to the position in which the furrow slice is to be laid or turned, substantially as set forth.

No. 17,547.—HENRY S. AKINS, of Berkshire, N. Y.—*Improvement in Mould-boards for Reversible Ploughs*.—Patent dated June 16, 1857.—The position of the mould-board can be reversed for turning alternate right and left furrows, by unhooking hook J from brace E, and by then turning the brace E on its pivot F, the gudgeon G carrying with it the share and mould-board.

The inventor says: I do not make an unqualified claim to the mould-board composed of rods, for that has been known and used before in ploughs to turn furrows one way.

Neither do I claim turning the share and mould-board of a plough to both sides of the land side, as that is a well known operation.

I *claim* providing a reversible plough with a mould-board susceptible of torsion, or of being twisted to the right and left by means of being composed of a series of rods or bars of any desired number, so constructed and arranged with the other parts of the plough that they can be placed and held alternately in the different positions and directions required for turning alternate right and left furrows.

No. 18,894.—DAVID EBERLY, of Waynesville, O.—*Improvement in Shovel Ploughs*.—Patent dated December 22, 1857.—This invention consists in an arrangement of means for adjusting the shares E, whereby the same may be placed more or less angularly or obliquely with the ground, so that they may enter the same at a greater or less depth, as desired, and also placed so as to throw the soil either towards or from the rows, as the occasion may require.

Claim.—Securing the shares E E to the beam A, by having the upper ends of their bars D fitted in the bars C, the bars D also passing through the loops or eyes F of the bars G, and secured therein by keys *i*, the bars G being secured to the beam A, as shown, and the whole arranged as and for the purpose set forth.

No. 16,937.—DAVID B. SPENCER, of Parkersburg, Va.—*Improvement in Steam Ploughs*.—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving. The plough is driven by applying steam power to the crank pin *a*.

Claim.—1st. The use of the single wheel B at the rear of the carriage as the sole driving-wheel, and running in the bottom of the furrow turned by the plough C, substantially in the manner described.

2d. Also hanging the two supporting wheels D and E eccentrically on the same turning or rocking axle F, so that, whether the machine runs upon level ground, or with one wheel higher or lower than the other, the frame A and boiler J shall still preserve its horizontal position, as herein set forth.

No. 18,446 —JOHN R. GRAY, of Fair Play, Wis.—*Improvement in Steam Ploughs*.—Patent dated October 20, 1857.—This invention consists in driving or propelling the machine by means of two or more screw shafts, provided with right and left threads, and rotated in opposite directions, and using, in connexion with the screw shafts, adjustable wheels and gang ploughshares; the whole being so arranged that an efficient, simple, and durable implement is obtained, which may be managed by an attendant with great facility.

The inventor says: I *claim* the screw shafts E E¹, two or more, provided with right and left threads or flanches *a*, and arranged and operated substantially as shown, or in an equivalent way, for the purpose of propelling the machine both in a direct line and laterally, as described.

I further claim the adjustable wheels N N, when arranged and applied to the machine, as shown, for the purpose specified.

I also claim connecting the arms Z Z to the bars W, which are operated or actuated by the lever T, in combination with the shares A A¹, attached to the swinging arms Z Z, in the manner and for the purpose set forth.

No. 18,468.—E. GRAVES OTIS, of Yonkers, N. Y.—*Improvement in Steam Ploughs*.—Patent dated October 20, 1857.—This invention consists in the employment of an endless chain of ploughs and harrows arranged and applied to a steam traction engine in a peculiar manner, whereby a simple and practical implement is obtained. The engravings and claim further explain the nature of this improvement.

Claim.—The inventor says: I am aware that ploughs have been previously attached to endless chains, and I therefore do not claim broadly such device, irrespective of the arrangement of the parts substantially as shown.

But I *claim* attaching the ploughs N to the chains K K, as herein shown and described, whereby they may be adjusted more or less obliquely to correspond with the oblique position of the furrows, and also to allow for the contraction of the chain in passing around the pulleys.

I further claim the teeth *s*, attached to the sleeves *v*, on the tie-rods *m*, and provided with the springs *u*, substantially as shown for the purpose specified.

No. 18,619.—JOHN WOOD and REUBEN NORTH, of Rochester, Wis.—*Improvement in Sub-soil Ploughs*.—Patent dated November 10, 1857.—By this invention two ploughs are combined in such a manner that, when it is desired to perform ordinary surface ploughing, it can be done without removing the auxiliary plough, or suffering any inconvenience from its remaining on the main plough. And, again, if it is desired to sub-soil, it can be done by simply depressing a lever; and if it becomes necessary to raise the sub-soil share out of operation, it can be done by raising the adjusting lever.

The inventors say: We are aware that a sub-soil attachment to ploughs is very common; also, that a thin, fixed blade has been arranged under the bottom of the surface plough. Therefore we do not claim such attachment as our invention.

But we *claim* the combination of the auxiliary or sub-soil share, and its adjustable standard, with the adjusting lever and its attachments, when the whole is constructed and arranged in the relation to the main share and beam as described and for the purpose set forth.

No. 16,722.—PAUL DENNIS, of Stillwater, N. Y.—*Improvement in Potato-Diggers*.—Patent dated March 3, 1857.—The stops or elevations *c* of the separator are arranged out of line with each other, so that the irregular undulating surface may effectually break up the dirt surrounding the potatoes, and prevent its passing off readily from the separator. The latter runs directly upon the ground behind the digger, and, by turning upon a shaft *E* at the forward end, adjusts itself to the soil. After the potatoes come upon the separator they roll some distance along a plane portion, where the dirt is stripped off and left adhering to the ground beneath; and by the time the potatoes are carried over the irregular stops *c* and a terminal plane portion *F*, they are pretty thoroughly cleaned.

Claim.—In combination with the digger *A*, in the manner described and shown, constructing the separator so as to form an irregular undulating surface for the potatoes to fall upon, for the purpose set forth.

No. 17,129.—JOHN TAGGART, of Roxbury, Mass., assignor to Himself and WILLIAM W. MESSER, of Boston, Mass.—*Improvement in Potato-Diggers*.—Patent dated April 21, 1857.—As the machine is drawn along, the plough point *a* is made to run through a row of hills, and the arms *I* of the lifter wheels *D* will seize and raise the earth and potatoes below them, and force the earth through between the grate-bars *C*, while the potatoes will pass through the apertures *K* down upon the discharging spouts *F*, whence they are discharged and deposited in rows upon the ground.

Claim.—The combination and arrangement of the plough, the gird or grate, the revolving tooth-lifter wheel or wheels, and the means of discharging the potatoes from the same.

No. 17,428.—ISAAC GRIFFEN, of Quaker Springs, N. Y.—*Improvement in Potato-Diggers*.—Patent dated June 2, 1857.—As this machine is drawn over the ground, the teeth *a*, aided by the operations of the

fork F, which is swayed back and forth by the driver, cut off and remove weeds near the surface of the ground, so that the drags T may, without material obstruction, bring the potatoes out of their hills.

Claim.—The arrangement of the drag G, axle A, and swinging fork F, substantially in the manner and for the purpose set forth.

No. 18,899.—JACOB E. HARDENBURG, of Fultonville, N. Y.—*Improvement in Potato-Diggers.*—Patent dated December 22, 1857.—This invention consists in the combination of an adjustable share and grating Y, and horizontal revolving arms A² A², attached to a suitable framing A, mounted on wheels B B, and arranged relatively to each other, whereby the desired work may be accomplished quickly and well.

The inventor says: I am aware that shares and gratings or riddles have been employed for digging or ploughing up potatoes, and separating them from the earth; and I do not claim such parts, separately considered, and irrespective of the rotating arms.

But I *claim* the combination of the share P, grating Y, rotating arms A¹, arranged as shown, or in an equivalent way, to operate as and for the purpose set forth.

No. 18,954.—ISAAC S. BUNNELL, of Montrose, Pa.—*Improvement in Potato-Diggers.*—Patent dated December 29, 1857.—A represents the beam of an ordinary plough; B, a ploughshare with bevelled mould-board *a a* on each side of the vertical axis of the standard; E is a transverse for connecting the rear ends of the wings; F F are two rakes; they are arranged diagonally across the wings on the under side of the same, being fastened by means of vertical pivots *d d*; G G are two connecting rods for adjusting and holding the rakes at any angle desired. These rods are pivoted to the outer ends of the rakes and to the front ends of the wings, as shown at *f f*; *g g g* are a series of adjusting holes in wings; they serve for receiving the pivots *f f* of the rods G G.

Claim.—The arrangement relatively to each other, and for united operation, of the oblique-hinged wings D D, diagonal pivoted adjustable rakes F F, pivoted adjustable rods G¹ G¹, and double mould-board ploughshare B *a a*, substantially as and for the purposes set forth.

No. 19,009.—A. ANDERSON, of Markham, Canada.—*Improvement in Potato-Diggers.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The opening shares 8 and 6, and the share or shovel 7, 9, and 3, in combination with figure 4 and revolving toothed cylinder 8 and 2, for the purpose of digging and separating potatoes from the soil; the whole being constructed and arranged as described.

No. 17,856.—JOSEPH HENLINGS, of Philadelphia, Pa., assignor to W. H. LAWSON, B. M. HENLINGS, and JOSEPH HENLINGS, of the same place.—*Improvement in Machines for digging Potatoes.*—Patent dated July 21, 1857.—As the machine is drawn along, the knife *c* severs the stalks close to the upper portion of the ridge, and the revolution of shaft *b* causes the teeth *g* to break up the ridge, and carrying the potatoes up-

ward drops them upon the ground in the rear of the machine. When an obstacle is to be passed, the operator lifts the rear portion of the frame, thereby raising the teeth *g*; this movement depresses the front portion of the frame, causing the cross-piece *g* to draw downward the arm of lever *n*, which is under it, and thereby causes the other arm of said lever to lift the stalk-cutter *c*, so that it will pass over the obstacle. When the rear of the frame is dropped, the stalk-cutter is free to fall to its operating position.

Claim.—The combination of the rotary digger, oscillating frame, and oblique stalk-cutter, connected and operating substantially as specified for the purpose set forth.

No. 17,827.—GALUSHA J. BUNDY, of Lyndon, Vt.—*Improvement in Machines for Planting Potatoes.*—Patent dated July 21, 1857.—As the machine is drawn along, a reciprocating motion is given to the slide *F*, and the seed passes alternately through the passages *b* of the plate *a*, while the gate *L* distributes the manure in hoppers *a*¹, to drop to the ground with the seed.

Claim.—The arrangement of the two movable gates *a* and *L* with the slider, the seed and fertilizer hoppers, and their discharging holes or chambers; the whole being substantially as set forth.

No. 18,079.—ANDREW J. BLODGETT, of Newport, New Hampshire.—*Improvement in Rakes.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim spring teeth applied to a rake head.

But I *claim* making each arched brace rod and one or two teeth in one piece of wire, and extending the same through the rake head, and into or through the handle, substantially as specified.

No. 18,339.—A. A. HOTCHKISS and ANDREW HOTCHKISS, of Sharon Valley, Connecticut.—*Improvement in Rakes.*—Patent dated October 6, 1857.—On the under side of the rake-head *A* is cast a ferrule *C*, into or through which the end of the rake-handle *B* passes and is made fast. The ferrule *D* and its braces *d d* and *e e* are cast in one piece, and the rake-head with its ferrule *C*, teeth *a*, and braces *b*, are cast in another piece, and the two riveted together at *f f*, which forms the rake.

Claim.—The inventors say: We are aware that cast-iron rakes have been made before, and that a ferrule has been braced from the rake-head by braces which were riveted to both the ferrule and rake-head; we therefore claim neither of these things.

But we *claim* the rake-head *A*, with its teeth *a*, ferrule *C*, and braces *b*, in one piece, and casting the ferrule *D*, with its braces, in another piece, and uniting the two pieces together, substantially in the manner set forth; by which means we produce a new, cheap, and serviceable article of manufacture not heretofore known in the trade.

No. 17,772.—S. W. WOOD, of Washington, D. C., assignor to LEWIS H. PARSONS, of the State of New York.—*Improvement in Hay Rakes*.—Patent dated July 7, 1857.—The rake is retained in position by lever G until a sufficient quantity of hay is gathered; and when the tube C is released, the toothed-wheel F takes into the earth, revolves the rake, leaving the gathered hay in a row, and presents the rake in position for the next operation.

Claim.—A hay rake consisting of a loose revolving tube c, in combination with a segment wheel F placed upon an axle A, said tube being provided with the teeth D of any desired form or material; the whole being arranged and operating in the manner substantially as described.

No. 18,731.—L. A. C. BROWN, of Sparta, Illinois.—*Improvement in Hay Rakes*.—Patent dated December 1, 1857.—A is an axle, and B B are wheels placed loosely on it, one at each end. C C' are thills, which are attached to the axle. D is a bar, which is provided with two hooks a a, said hooks fitting in eyes b b, which are attached to a cross-piece E of the thills. The hooks are allowed to turn freely in the eyes b b and the bar D; rake teeth c are attached. These teeth may be constructed of wire coiled at their ends, as usual, or other form of teeth may be used.

The inventor says: I do not claim, broadly, a rake so arranged as to swing and allow its teeth to be elevated that it may deliver its load; for rakes thus arranged have been previously used.

But I *claim* operating or raising the rake through the medium of the lever I provided with the pin i, the wheel B', and the curved bar j, arranged substantially as described.

No. 18,850.—VALENTINE HYATT, of Westfield, Massachusetts.—*Improvement in Horse Rakes*.—Patent dated December 15, 1857.—This invention consists in the construction of a revolving rake, so arranged that it can be discharged of its burden at any moment by the hand of the driver; the rake performing half a revolution at each discharge. Also, in the means of elevating the rake so that it will pass clear of obstructions and of the ground when it is desired not to use it.

The inventor says: I *claim*, 1st. The combination of the lever L, cross-bar C', levers C C, and arms G G, for raising the rake from the ground when not in use, as described.

2d. I claim the combination of the lever N, connecting rods n n, levers M M, and arms G G, for holding the rake whilst it is filling with hay, and for discharging the load, as set forth.

No. 16,342.—JAMES H. THOMPSON, Newark, New Jersey.—*Improved Raking Attachment for Reapers*.—Patent dated January 6, 1857.—As the machine is drawn along, a vibrating motion is given to the bar E by means of cranks F and G and connecting rod d, and a vibrating motion is also communicated to shaft F', the teeth e raking the cut grain off the platform A. As the shaft F' moves from the front towards the rear end of the platform, it is prevented from turning by pawl j' catching against one of the shoulders g on the hub f; but as

soon as shaft F commences its forward movement, the wheel G¹ is connected with shaft F by pawl *h* catching against one of the shoulders on hub *f*, and shaft F¹ will be turned half a revolution, so that the teeth *e* clear the grain on platform A.

The inventor says: I am aware that vibrating rods have been used before. I do not claim such.

I claim the vibrating and intermittently rotating shaft F¹, when fitted or placed in the bar E, and provided with teeth *e*, and operated by the wheel G¹, hubs *f f*¹, pawls *h j*¹, cranks F G, and connecting rod *d*, arranged as described.

No. 16,582.—PETER HARNIST, of Marinatown, Illinois.—*Improved Raking Attachment for Reapers*.—Patent dated February 10, 1857.—The broken lines represent one, and the dotted lines another, position of the raking apparatus.

Claim.—Operating the rod M to which the rake-head L is pivoted by means of rock-shaft N, arms *g f*, and connecting rods P O, in combination with spring Q, crank K, and bar S, when the same are constructed and arranged for joint operation, substantially in the manner and for the purpose set forth.

No. 16,413.—DAVID WATSON, of Newark, N. J.—*Improvement in Reaping and Mowing Machines*.—Patent dated January 13, 1857.—The finger-bar B, to which the rotating cutters E are attached, is bolted to the stirrup A by means of bolt *a*, and can swing on said bolt to adapt itself to the unevenness of the ground, and the spring tends to bring the bar B back to a horizontal position.

Claim.—The use and application of the adjustable curved flat spring *c* to the upper surface of the finger-bar B, when both are attached to the stirrup A for joint action, in the manner and for the purpose described.

No. 16,599.—JEREMIAH W. MULLEY, of Amsterdam, N. Y.—*Improvement in Reaping and Mowing Machines*.—Patent dated February 10, 1857.—Fig. 1 represents the machine ready for mowing, with the part A B of the platform open and secured to the guard-board M by means of hook R; fig. 2 represents the machine with the platform closed ready for reaping.

Claim.—Constructing and arranging the platform of combined reaping and mowing machines in parts, when one or more of said parts may occupy at pleasure such position in relation to the cutters as to form the track clearer for mowing, or the platform for reaping, in the manner substantially as set forth.

No. 17,205.—CHARLES CROOK, of New Hope, Pa.—*Improvement in Reaping and Mowing Machines*.—Patent dated May 5, 1857.—When this machine is used for reaping, the driving-wheel D transmits motion to pinion J and bevel-wheels K *h*, which turn shaft H connected with the cutter-bar of the machine. For mowing, the platform of the machine is lowered and the pinion J is thrown in gear with wheel L², so as to slacken the speed suitably for mowing.

Claim.—Operating the cutters of combined reaping and mowing machines by means of the intermediate pinion J, in combination with the internally geared driving-wheel D and the spur wheel D², on the driving-wheel shaft, when the same are constructed and arranged in relation to each other substantially as and for the purpose set forth.

No. 18,238.—JOHN G. DUNHAM, of Raritan, N. J.—*Improvement in Reaping and Mowing Machines.*—Patent dated September 2^d, 1857.—The nature of this invention consists in so constructing the outer end of the sickle beam that it can be sustained at different heights by the use of a single wheel, and thus both ends of the sickle beam be kept on a level with each other.

The drawings and claim fully describe the invention.

Claim.—In setting forth what he claims as new in this improved machine, the inventor says: I am aware that the use of a sliding arm or equivalent means has been employed for changing the elevation of the sickle, and therefore I do not claim generally the application of a slotted frame and sliding arm for such purpose.

But I claim, in combination with the rear part of the rectangular frame O, the supporting castor wheels K M, with the inclined sliding frame, and arms J and I, adjustable brace N, and inclined bar L, furnished with a series of sockets l l l; the whole arranged substantially as and for the purposes set forth.

No. 18,329.—MARCUS E. ELLSWORTH, of Hudson, O.—*Improvement in Reaping and Mowing Machines.*—Patent dated October 6, 1857.—The nature of this invention relates to an improvement in Manny's combined mower and reaper, and consists in the peculiar manner of constructing the driver's seat and other parts connected therewith, and combining the same with said machine.

The inventor says: With my improvement there is no danger of the driver being thrown forward or being injured by the machine in passing over uneven ground. The seat is such that the driver can see in time everything which would be likely to obstruct the working of the machine; and its arrangement is such that the castor is dispensed with, and the machine balanced on the driving and truck wheels, thus rendering the machine much more light and easy of draught, so that it has been determined by practical test that a team of horses with this machine, is as effective as a team of three horses with the ordinary machine. The drawings and claim will give an idea of the improvement.

Claim.—I claim, says the inventor, the seat or stand B, consisting of the seat-board M, spring N, standard G, joint I I, foot-board and rests E F, when constructed and arranged in relation to and used in combination with Manny's combined reaper and mower, as set forth.

No. 18,829.—H. G. VANDERWERKEN, of Greenbush, N. Y.—*Improvement in Reaping and Mowing Machines.*—Patent dated December 8, 1857.—The nature of this invention consists in arranging the large internal spur gear fast in an auxiliary frame, and attaching said frame to the main or reaper frame, and using the same thus arranged in combination with a series of planetary wheels which have their

axes on the inner face of the propelling wheel, and gear with a central transmitting pinion made loose on the shaft of the propelling wheel.

Claim.—The combination of the stationary and bracing gear F with the auxiliary frame A¹, main frame A, driving-wheel C, and pinion H G, arranged as and for the purposes set forth.

No. 18,833.—J. W. BROKAW and THOMAS HARDING, of Springfield, O., assignors to BENJAMIN H. WARDER, JOHN W. BROKAW, and JONATHAN C. CHILD, of Springfield, O.—*Improvement in Reaping and Mowing Machines.*—Patent dated December 8, 1857.—This improvement relates to a new method of raising and lowering the finger-bar for the purpose of regulating the height at which the grain or grass is to be cut, and at the same time, and by the same means, to relieve the joints of the tongue from strain.

Claim.—The peculiar method of regulating the height of the cut, and relieving the draught on the joints of the tongue, by means of the bar K, in combination with a tongue I, hinged to the finger-bar C, or front of the main frame of the machine, both being constructed, operated, and arranged in relation to each other, in the manner as described.

No. 17,990.—JOHN T. WHITAKER and CALVIN D. READ, of St. Charles, Illinois.—*Improved Finger-bar for Reaping and Mowing Machines.*—Patent dated August 11, 1857.—This invention consists in the use of a rolled tubular finger-bar E, of the form represented in the engraving, whereby the strength of the machine is increased and its weight lessened. The fingers s are inserted within suitable holes and secured to the bar by means of screw nuts s¹.

Claim.—A tubular finger-bar, when constructed in the peculiar manner and for the purposes substantially as set forth.

No. 18,340.—CHARLES HOWELL, of Cleveland, Ohio.—*Improved Guard-finger for Reaping and Mowing Machines.*—Patent dated October 6, 1857.—The object of this invention is to obviate the difficulties which arise from heavy or clumsy guards or fingers of reaping and mowing machines, which are liable to be clogged or gummed up, thereby preventing the free working of the knife. This invention consists in constructing the fingers in a peculiar manner of sheet metal, which is shown in the drawings.

The inventor *claims* constructing the guard-fingers of reaping and mowing machines of sheet metal, in the manner substantially as described and shown in figures 1, 2, 3, and 4.

No. 16,971.—GEORGE ESTERLY, of Heart Prairie, Wisconsin.—*Improvement in Reaping-Machines.*—Patent dated April 7, 1857.—The platform A is suspended to beam c by means of a hook a² on rod b, and the raker can raise or lower said platform by turning the lever nut a¹. The raker seat e can also be adjusted to any desired position on the beam c, as described in the claim.

The inventor says: I do not claim the use of an adjustable raker's seat or stand attached to a swinging platform.

Neither do I claim an adjustable raker's seat or platform.

But I *claim* the combination of the common supporting beam *c* with an adjustable raker's seat or stand *e* and platform *A*, when said parts are constructed and arranged in relation to each other so as to be easily adjusted to any desired position, there firmly held while the machine is in operation, and the raker on the platform, in the manner and for purpose set forth.

No. 16,735.—CALEB LEE, of Knox Township, Ohio.—*Improved Raker for Reaping-Machines*—Patent dated March 3, 1857.—As the rake *B*, upon the end of shaft *C*, moves forward and backward along the guard *E*, the pins *p p* will alternately strike one of the latches *ll*, so as to lower one latch and disengage the lever *g* therefrom and force it into the notch of the other latch, and thus alternately raising or lowering the rake and holding it in its proper position, up or down, while it sweeps backward or forward.

Claim.—The two spring latches *ll*, working upon the arm *k* in combination with the pointed lever *g*, the latches being notched to receive the same, and both the lever and latches being arranged so as to be acted upon alternately by pins *p p*, to raise or lower the rake and hold it in either position as required; all in the manner and for the purpose set forth.

No. 18,188.—A. H. CARYL, of Sandusky, O.—*Improved Raking Attachment for Reaping-Machines*.—Patent dated September 15, 1857.—As the wheel *V* is turned in the direction of its arrow, it revolves shaft *H*, which swings round shaft *I*, roller *l* running on way *M*, and rake *Q* sweeps the cut grain off the platform *R*. When the shaft *I* has swept over an arc of nearly 90°, the cogged wheel *a* is operated by rack *c*, on the way *M*, turning shaft *O*, and lifting rake *Q*, which is held in an elevated position by a ratchet and dog, while the shaft *I* is being swung towards the front end of the machine. When sufficient grain has fallen on the platform *R* to make another gavel, the driver presses with his foot on the end *k'* of lever *h'*, and sets free the wheel *V*; when, by the uncoiling of the spring *e'*, the wheel is turned in the direction opposite to that indicated by its arrow, and swings back shaft *I* towards block *N*. The instant this shaft strikes block *N*, the dog *t* is tripped, and the rake *Q* descends into the grain and rakes it off, as described.

Claim.—First. Raising the rake in the plane in which it is inclined by means of the devices described for the purposes specified.

Second. Operating the raking attachment back and forth over the platform by means of the mechanism, substantially as set forth.

Third. Inclining the rake from a vertical plane to correspond with the length of the grain being cut by means of the devices described.

No. 18,221.—CHRISTIAN YOST, of Leacock township, Pa.—*Improved Raking Attachment for Reaping-Machines*.—Patent dated September 15, 1857.—As the machine is drawn along, the two rows of cogs *N*

on wheel M operate alternately the cogged sectors K L, thereby oscillating shaft J, wheels I and G, and crank Z, which operates arm C, causing the rake A to descend and to pass over the platform B, the outer end of arm C bearing against roller H, while the rake-handle is supported by the hinged stirrup D.

Claim.—Operating the rake A by means of the device D, the regulator C, in combination with the semi-cog wheels K L and pins N N, arranged and connected substantially as set forth.

No. 18,525.—JACOB G. WINGER, of Vicksburg, Miss.—*Improvement in Cotton-Scrapers*.—Patent dated October 27, 1857.—In using this implement, the ridge is scraped on both sides at one operation, and the top of the slope is left with the carved surface *m*; this leaves the top of the ridge in a better condition to sustain the plant than can be effected with a scraper of ordinary construction, either single or double. The inclined plates C rest upon the surface of the ridge, causing the weight of the implement to be effectual in pressing the earth.

The inventor says: I do not claim, broadly, the construction of cotton-scrappers for acting on both sides of the ridge at a single operation; but I *claim* the longitudinally adjustable cutters C C, having each an inclined vertical and curved portion, as described in combination with mould-boards, supports, and frame, substantially as set forth.

No. 18,158.—ABNER H. PINNEY, of Columbus, O.—*Improvement in Scythe Snaths*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Uniting the two pieces C E by a branched ferrule A B, for the purpose of making a scythe snath that shall have the proper form without being bent into that shape, and the necessary strength and rigidity to make it an economical implement, as described and set forth.

No. 18,119.—OLIVER CLARK, of Henrietta, O., assignor to AARON H. PINNEY, of Columbus, O.—*Improvement in mode of Attaching Scythes to Snaths*.—Patent dated September 1, 1857.—The scythe shank *d* being placed in the recess of block A, and through the eye of stirrup *e*, it is tightened by the screw, and the angle of the blade to the snath is adjusted by passing the shank *d* a greater or less distance through the eye of the stirrup, and the edge is raised or depressed by moving the collar longitudinally upon its seat, thus correspondingly rolling the shank in the recess of block A.

The inventor says: I do not claim the making of a scythe with a curved heel, as I claimed that in my former patent; but I *claim* the metallic block A, in combination with stirrup bolt *e*, collar *f*, and scythe heel *d*, constructed and arranged in the manner and for the purpose set forth.

No. 18,326.—WILLIAM T. CLEMENT, of Shelburne Falls, Mass.—*Improvement in mode of Attaching Scythes to Snaths*.—Patent dated October 6, 1857.—This invention consists in securing the tang or

shank of the scythe to an adjustable plate by means of a loop and screw, the plate being pivoted to the butt of the snath, and the several parts so arranged that the scythe may be not only firmly secured to the snath, but also adjusted or set at varying angles with it, as circumstances may require. In this improvement no nuts are required to be removed or unscrewed in order to adjust the scythe. The slot K in the plate D allows of the ready insertion of the tang E through the loop C, the claw *l* passing into said slot as the tang is passed within the loop.

The inventor, in stating his claim, says: I *claim* the combination of the adjustable plate D, loop C, and screw *c*, when arranged substantially as described for the purpose specified.

No. 18,982.—JACOB MUMMA, of Harrisburgh, Pa.—*Improvement in Seed-Drills*.—Patent dated December 29, 1857.—The frame A is composed of two side pieces *a*, (which extend forward, forming the shafts of the carriage,) and two cross pieces *b*; it rests upon an axle B, with suitable wheels, and serves to support the various parts of which the machine is composed. Upon the forward part of the frame is placed the apparatus C for broadcasting lime, &c.

Claim.—The combination of the broadcasting apparatus for sowing pulverized manures with the seed-drills, when the former is placed in advance of the latter; the whole being arranged and operated in the manner and for the purposes specified.

No. 16,511.—ERASTUS D. WOODING, of Dixon, Ill.—*Improvement in Seeding-Machines*.—Patent dated January 27, 1857.—The nature of this invention consists in the construction of a double reciprocating seed-slide B D, with double the amount of holes in the under section that is made in the upper slide, and in the construction of a revolving spreading roller R supported by the braces S; T represents the band for driving the roller, said band passing around the hub H of the driving-wheel, which, by its revolving motion, causes a more regular distribution of the grain on the ground.

Claim.—The spreading roller H, when constructed to revolve, for the purposes substantially set forth.

No. 16,772.—LEWIS B. MYERS and HENRY A. MYERS, assignor to Themselves and ISAAC MYERS, of Massillon, Ohio.—*Improvement in Seeding-Machines*.—Patent dated March 3, 1857.—Figures 1, 2, 3, represent the successive positions of the pistons d^1 d^2 ; in figure 1, the tube *b* begins to fill from a hopper above with seed; in figure 2 it is filled with seed between the two pistons d^1 d^2 , which quantity of seed will be discharged during the time the pistons come into position, figure 3.

The inventors say: We are aware that rollers, valves, and slides have been used in seed-drills for distributing the seed; therefore, being old devices, we do not claim them.

Neither do we claim an aperture, nor two piston heads on one rod separately.

We *claim* measuring and distributing grain seeds or fertilizers, by two or more piston heads d^1 d^2 , and one rod *e*, or their equivalents,

operating in and out of an aperture *b*, in the manner and for the purpose substantially as described.

No. 18,083.—CHARLES W. CAHOON, of Brooklyn, N. Y.—*Improvement in Seeding Machines*.—Patent dated September 1, 1857.—As the machine is drawn along, the agitating teeth *d* cause the seed to pass from hopper *C* into discharger *F*, and rotary motion being given to said discharger, the seed is thrown broadcast from the outer edge of discharger *F*; the spiral flanches *p* create a current which gives an impetus to the seed, and the disk *H* prevents the air from rushing into the mouth of the discharger *F*.

The inventor says: I do not claim the slide *b*, nor the rock-shaft *c*, with the hopper. Neither do I claim distributing or sowing seed broadcast by means of centrifugal force effected by the rotation of wheels or cylinders, irrespective of the construction and arrangement shown.

But I *claim* the disk *H*, and rock-shaft *c*, with its teeth *d*, in combination with the funnel-shaped discharger *F*, having spiral flanches *p*, arranged substantially as and for the purposes set forth.

No. 18,346.—DANIEL MARKHAM and AUSTIN S. MARKHAM, of Monmouth, Ill.—*Improvement in Seeding Machines*.—Patent dated October 6, 1857.—In this improvement the seed falls from the seed box into the screen *V*, which is open at the top, and so made as to shelter the seed from the wind. The back part of it is an inclined plane, upon which the seed falls, and which tends to distribute the seed in its passage to the ground. The forward part of this screen is curved and extends a little nearer to the ground, for the purpose of preventing the wind from affecting the grain from the direction opposite to that in which the machine is being drawn. In planting, the markers *W* serve to show the position of the seed. Should it be desirable to reduce the depths of the furrows to less than what the ploughs will naturally cut, it may be done by fastening the lever *H* in any required position. The shaft of the caster is supported in two pieces of timber *Y* and *Z*.

The inventors say they *claim* the inclined screen, with the overhanging lip upon the forward side, for protecting the grain from the wind, arranged as set forth.

No. 18,492.—HORACE B. ALLEN, of Nelsonville, Ohio.—*Improvement in Seeding Machines*.—Patent dated October 27, 1857.—When it is desired to run the carriage without working the ground or sowing the seed, the levers *ff* are pressed back on their catches *g g*, whereby the slide *H* is held in such position that none of its caps *ee* come opposite to the spouts *G G*, the U axle of the hind wheels is then depressed and secured in position as seen in the engraving, and the steering wheel *E* thrown down by means of lever *a*, attached to its oscillating shaft *D*, when the carriage is so elevated that its teeth and seed spouts are placed out of reach of the ground. The sliding bar *H* is operated upon through the lever *h*, directly by the spokes of the wheels *C C*.

The inventor says: I *claim* the clearers *s* constructed as described, with the projection *v* working in the groove *w*, and operated by the motion of the slide *H*, as and for the purpose set forth.

No. 18,579.—ALBERT FRANKLIN, of Genoa Cross Roads, Ohio.—*Improvement in Seeding Machines*.—Patent dated November 10, 1857.—This improvement is intended to be used principally for sowing among standing corn such grain as wheat, barley, or rye. The claim and engravings show the nature of this invention.

Claim.—The combination of the wedge-shaped or triangularly-formed discharge openings *h i* of the hopper *C*, with the similar shaped cells *m n* in the feed cylinder *B*, arranged for operation in reverse directions to each other, and the several cells in each circular row of said cylinder forming though divided, a continuous opening, by means of channels *Z* connecting the apex of the one cell with the base of the other, for the purposes set forth.

No. 18,603.—EPHRAIM RUSSELL, of Coatesville, Pa.—*Improvement in Seeding Machines*.—Patent dated November 10, 1857.—One part of the axle *b* carries a cam wheel *c*, which revolves loosely between a shoulder *a* and the hub of a hand wheel *e*, which being screwed upon the axle operates as a friction clutch when turned in the proper direction to press the cam wheel against the shoulder, the end of one part of the axle being pivoted in the end of the other.

The conveyor spouts *r* consist of two parts hinged together, and are attached vertically to the frame and held in position by pins which are easily shifted to regulate the depth to which the shoe *W* enters the furrows.

Claim.—The inventor says: I *claim*, 1st, the combination of the screw friction clutch with the cam wheel, in the manner described.

2d. The adjustable jointed conveyor spouts, when constructed in the manner and for the purpose specified.

No. 18,730.—JARVIS CASE, of Springfield, Ill.—*Improvement in Seeding Machines*.—Patent dated December 1, 1857.—The engravings and claim describe the nature of this invention.

Claim.—So combining with the driver's seat *H* a marker, having in its arm a hinged brace, or its equivalent, as that said driver may, from his seat, turn over or reverse said marker, suspend it to the machine whilst turning around, and drop it into its working position without leaving his seat on the machine, as set forth for the purpose explained.

No. 18,735.—JACOB GEISS and JACOB BROSIUS, of Belleville, Ill.—*Improvement in Seeding Machines*.—Patent dated December 1, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The inventor says: We are aware that perforated slides, moving rectilinearly in opposite directions, have been previously used for distributing seed; and we are also aware that slides to vary the orifices of seed receptacles or cells have been previously used.

We therefore do not claim broadly, and irrespective of construction and arrangement, such devices.

But we *claim* the employment or use of the two sector plates B C, constructed as shown, viz: one being provided with an opening *f*, and the other with a recess or seed receptacle *g*¹ and ledge *i*, the plates being fitted on a common axis *b*, and operated through the medium of the eccentrics *d d*, and the connecting rods D D, attached to the arms *c c* at the desired points, and for the purpose set forth.

No. 18,765.—DAVID O. PAIGE and JOHN CLARY, of Dayton, Ohio.—*Improvement in Seeding Machines*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventors say: We are aware that pins and flanges have been attached to rotating drums or cylinders, for the purpose of agitating the seed in the seed boxes of seeding machines, and preventing the choking and clogging of the same.

But we are not aware that spiral flanges placed in reverse positions on drums or cylinders, so as to give a reciprocating or vibratory movement to the seed, and thereby effecting a greater agitation than usual, have been used.

We do not claim, therefore, broadly and irrespective of the arrangement shown, the employment or use of spiral flanges or pins placed in spiral rows on drums or cylinders; for they have been previously used.

But we *claim* the spiral flanges *c d*, placed in reverse positions on the rotating cylinders D D, within the hopper A, substantially as and for the purpose set forth.

No. 18,853.—HIRAM KELLOGG, of McHenry, Illinois.—*Improvement in Seeding Machines*.—Patent dated December 15, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: Being fully aware that revolving harrows, pulverizing cylinders, and shafts with spikes and slicing blades have been used, I therefore do not claim such devices singly or in combination.

But I *claim* the construction of the double pointed mattock-like revolving digging shovels, arranged together in pairs at right angles to each other, and having passing through their centres a shaft or axle, and in arrangement and operation with a revolving scatterer C C C, *d d d*, attached to an adjustable graduating framing *e e e e*, *f f*, and in combination with an adjustable sliding hopper, or seed fountains J J, as described; and through all of which devices, forming an individual or unity of machine, the soil is dug up, pulverized, and scattered, and the seed or grain is deposited and covered up to a greater or less depth in one operation of the machine, as set forth.

No. 18,856.—SAMUEL MILLS, of New Castle, Ohio.—*Improvement in Seeding Machines*.—Patent dated December 15, 1857.—This invention consists in the employment or use of two distributing devices, peculiarly arranged and combined, so as to operate simultaneously, and plant seed in hills or drills, and also sow grain broadcast at the same time.

The seed to be planted in hills or drills is placed in boxes D D, and the grain to be sowed broadcast is placed in the box K. As the ma-

chine is drawn along, the seed is discharged from the boxes D D by the projections *i* on the shaft E, the tubes C conveying the seed into the furrows, a tube being in communication or line with each discharging orifice. The cam F and lever I give a vibrating movement to the cord J, and this cord, by its movement, serves to discharge the grain broadcast through the perforated bottoms of the box.

The inventor says: I do not claim, broadly, the sowing of two different kinds of seed at the same time in different ways; that is, in drills or hills and broadcast, for this has been previously done.

But I *claim* the rotating shaft E, provided with projections *i*, and placed within the seed boxes D D, which are provided with slides G H, in combination with the box K, having a perforated bottom, and provided with the endless cord J, operated by the cam F and lever I, as and for the purpose set forth.

No. 18,852.—CHARLES COX JAMES, of Dayton, Ohio.—*Improvement in Seeding Machines*.—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim, broadly, the employment of reciprocating perforated slides in seed planters.

Nor do I claim adjustable slides and indexes for regulating the quantity of grain sown.

But I *claim* the employment of a stepped slide E and a slide H, having conveyors I attached, the parts being arranged and operating substantially as shown, so as first to thoroughly agitate the seed while in the hopper, and then to deliver it with a shaking hopper-like motion to the furrow tubes, thus preventing all liability in the grain to clog or bunch, and rendering the machine capable of sowing various kinds of seeds without change or alteration of said slides.

No. 18,881.—JOHN CRITCHERSON, of Boston, Massachusetts, assignor to JOHN WARREN, of Boston, Massachusetts.—*Improvement in Seeding Machines*.—Patent dated December 15, 1857.—The nature of this invention consists in the use of fluted conical valves, in giving said valves a vibratory motion to agitate the seed, in the method of simultaneously raising or depressing said valves in order to regulate the amount of seed discharged, and in making the pin J, which imparts the vibratory motion to the valve, adjustable by means of the collar *j* and set screw K, so that more or less of the valve may be made to operate; and any one of them may be readily adjusted independently of the others, if desired.

The inventor says: I *claim*, first, the use of fluted conical valves, constructed substantially as set forth, and vibrating as described, for the purpose of agitating the seed.

Second, the devices for simultaneously raising or depressing said valves in order to regulate the amount of seed discharged, as also for stopping the flow of seed; said devices consisting substantially of the slat P P, the lower sides of whose extremities are wedge-shaped at 22 and 23, said slat being moved by the lever Q, and held in place; the set screw Z, and the reciprocating slat N N resting on P P, and furnished with holes 7 for receiving and vibrating the adjustable pins J, which support the valve.

No. 18,959.—WILLIAM COGGESHALL, of Masillon, Ohio, and B. B. WARNER, of Wadsworth, Ohio.—*Improvement in Seeding Machines*.—Patent dated December 29, 1857.—This invention is distinguished from others by the peculiar arrangement of the levers U V, the lever U acting upon the lever V by means of the coupling seen at *x*, so that both seed-rollers can be thrown out of gear by the action of the lever W and the connecting rod Y; at the same time the seed-tubes H are raised from the ground. Also in the arrangement of the levers U and V, whereby the intermediate wheels can be removed so that either seed-roller can be used separately.

The inventors say: We do not claim the alternate arrangement of seed cavities in the seed-roller, so as to produce a corresponding deposite of seed in separate adjacent rows or drills, being aware that such is not new.

We *claim* the levers U V, respectively, bearing the removable and replaceable gear wheels S T, when arranged, operated, and combined together, and in combination with the gear-wheels of the seed rollers and the driving-wheel, substantially in the manner and for the purposes specified, disclaiming all other combinations of levers and gearing not essentially the same as set forth.

No. 18,978.—JAMES LAWSON, of Lawrence Mass.—*Improvement in Seeding Machines*.—Patent dated December 29, 1857.—This invention consists in a marking device, arranged and operated conjointly with the seed distributing device in a peculiar manner, whereby the marking of hills and dropping the seed may be regulated as desired.

The inventor says: I do not claim the wheels M for forming the furrows; for they have been previously used.

Nor do I claim the two frames A F, arranged as shown; for they have also been previously used.

But I *claim* operating the marking device formed of the bars S S and the slides I, by means of the cams P, with pins *r* attached, when said cams are placed on the hollow shaft E, which encompasses the axle D, and is connected therewith by means of the nuts *a* fitted on the slotted ends of shaft E, whereby the dropping and marking devices may be regulated as described.

No. 18,360.—WILLIAM C. SQUIER, of Rockford, Ill.—*Improvement in Seed Sowing Machines*.—Patent dated October 6, 1857.—The inventor, in showing the nature and advantages of his improvement, says: "The nature of my invention consists in the peculiar manner in which the seeding machine is constructed—so as to be capable of being expanded when required for use, and folded and contracted when not in use, or while being transported from the field to the house, or from the house to the field—this arrangement avoiding all inconvenience in passing through narrow gates or passages, and economizing room in the farm yard or implement house, after the season has expired.

"In folding the machine, first withdraw the stop pieces *d d* of the braces from the holes in the tongue, and then withdraw the stop pins *e e* of the circle plates; all being now ready for folding, move the bed

pieces on their pivots *a a*, then turn the wheels and circle plates on their pivots *b b*. The machine being folded and adjusted, insert the pin *f* in the coupling *l*, in the hole of the bed piece *e*, and the stop pins in the holes of the circle plates. In unfolding, withdraw the pin of the coupling link, shift the wheels by turning the circle plates *G G* round to the ends of the hoppers, insert the stop pins of the circle plates, move the hoppers and bed pieces on their pivots round till they are at right angles with the tongue, and then adjust the braces *J J*, and couple the hoppers and bed pieces to the tongue by inserting the stop pins."

Claim.—The inventor says: I *claim* having the bed pieces *E E*¹, which carry the hopper *F F*, capable of turning on pivots *a a* of the circular bed plate *C*, and the short axles *H H* on pivots *b b* of said bed pieces *E E*¹, and the whole retained in proper condition, when expanded, by means of braces *J J*, stop pins *d d* and *e e*, and coupling *g g* on end of axles, substantially as and for the purposes set forth.

No. 16,698.—CORNELIUS VAN DERZEE, of Albany, N. Y.—*Improvement in Grain Separators and Straw Carriers*.—Patent dated February 24, 1857.—Each of the spokes *a b* revolves in circles, in consequence of the spoke supporters *D E D* being connected to the cranks *K F G F*. The straw is, at each successive half revolution of the cranks, carried the height of the crank and moved along twice that distance.

Claim.—The method of agitating and moving the straw, for the purpose of separating the grain from it, by rungs or spokes *a b* rotating in connexion with each other, or in reference to each other's movements, substantially as set forth and described.

No. 16,701.—BENJAMIN WRIGHT, of Hudson, Mich.—*Improved Method of Hanging the Sieves of Grain Separators*.—Patent dated February 24, 1857.—A hanging pin is inserted in an open slot in the shoe; therefore, as the shoe is shaken, it receives a quick, peculiar jerking motion, that prevents the screens from clogging.

The inventor says: I do not claim, broadly, the jarring of the shoe in grain separators, in order to keep the grain sieves clear, as that is seen in many separators.

Neither do I claim supporting the ends of the shoe upon elastic bars, for this is seen in J. Behel's patent, August 21, 1847.

Neither do I claim hanging the shoe in adjustable hanging bars; an example is seen in John Bambrough's patent, March 20, 1847, of such bars.

Neither do I claim supporting the inner end of the shoe, as in S. Canby's patent, December 28, 1852. The screw rod or pin *F*, in my device, does not support the shoe.

Neither do I claim any part or feature of the described machine which is seen in any other grain separator. But, to the best of my knowledge and belief, no grain separator has ever been made in which an adjustable rod or pin *F*, and hooked stop plate *G*, were used, in the manner and for the purposes I have described.

Therefore, I *claim*, as new in grain separators, the use of an adjustable pin *F* and hooked stop plate *G*, when the said parts are applied and operated in the manner and for the purpose described.

No. 16,578.—JOHN BEAN, of Hudson, Mich.—*Improvement in Extension Hoppers for Separators, Grain Mills, &c.*—Patented February 10, 1857.—The piece *a* may be moved in or out so as to enlarge or contract the opening at the bottom of the hopper B, whereby the feed of the grain to the screens I, J, &c., will be regulated.

'*Claim.*—The combination of an adjustable extension piece *a* with the hopper B, in the manner and for the purposes substantially as set forth.

No. 18,151.—J. V. JENKINS, of Jackson, Mich.—*Improvement in Sheep Shearing Machines.*—Patent dated September 8, 1857.—The rotary motion of shaft *a* is transmitted by means of pulleys *e*, *k*¹, *l*, and by universal joints to shaft H, which operates the shears *a** *z*. The cutting device may be moved in either direction, and the bar D may be swung around on shaft *a*, and secured at any desired point.

The inventor says: I do not claim the cutting device formed of the vibrating cutters *z* working over the stationary fingers *a*, for this has been previously used.

But I *claim* connecting together the two shafts F G, and also the shaft G to the cam shaft H, by universal joints, the connecting joint of the shaft F G being provided with guards *p v*, and connecting the upper end of the shaft F by a joint *h* to the slide E, on the swinging bar D, substantially as shown and described, for the purpose set forth.

No. 16,461.—R. P. BRADLEY, of Cuyahoga Falls, O.—*Improvement in Machines for Shearing Sheep.*—Patent dated July 27, 1857.—By operating handle H, the pin *g* is moved back and forth in slot *e*, communicating a vibrating motion to lever E, and the teeth *d* are vibrated over fingers *a*, the wool being cut between the teeth which operate similar to shears. The lever E has an equal movement, or its length of vibration is always the same, in consequence of the varying angles and length of the zigzags of slot *e*.

Claim.—Increasing the length of the zigzags of the slot *e*, in the lever E, as they recede from its fulcrum, so as to give the opposite end of the lever which carries the teeth or blade *d* a uniform and equal motion, as the pin is traversed in the slot, substantially as described.

No. 16,720.—EDWARD G. CHAMBERS, Bucyrus, Ohio.—*Improvement in Sheep Shears.*—Patent dated March 3, 1857.—The operator grasps the stock *c* in the palm of his hand with three fingers, and effects the vibration of the cutter *d e*, by the thumb and forefinger of the same hand acting upon the branches *h g* of handle H.

Claim.—The fixed plate stock C as described, combined with the bifurcated handle of the vibrating cutters, substantially as and for the purposes specified.

No. 17,837.—GEORGE C. HOWARD, of Hardwick, Mass.—*Improvement in Shovel, Spade, or Dung-fork Handles.*—Patent dated July 21,

1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—My improved manufacture of shovel handles, as made with a split and bent stock, and a round holder B applied and fixed together by concavities in the ends of the holder, convexities on the arm of the eye, and a rod E and metallic caps D, arranged and fixed together as specified.

No. 18,351.—NELSON NEWMAN, of Springfield, Ill.—*Improvement in Sod-Cutters.*—Patent dated October 6, 1857.—By this improvement the sod is first cut and then detached from the sub-soil and then re-cut into narrow strips and turned over, so that the bottoms of the sods present the soil to receive the seed, the implement thereby serving as a plough as well as a sod-cutter.

The invention consists in the use of vertical and horizontal cutters and a cutter-wheel or cylinder provided with knives, the parts being arranged to operate conjointly. The drawings, showing a side and top view of the machine, will give an idea of its operations.

The inventor *claims* the vertical cutters *d d* and the horizontal cutters *i i*, in combination with the rotating cutters D, attached to the wheels B B¹, the whole being arranged to operate conjointly as shown for the purpose set forth.

No. 16,539.—J. C. GASTON, of Reading, Ohio.—*Improvement in Machines for Sowing Grain and Fertilizers.*—Patent dated February 3, 1857.

Claim.—The arrangement in machines for sowing grain and fertilizing materials of a reciprocating feed bar D at the required distance from the bottom of the hopper, for equalizing the supply of grain or fertilizing substance to the escape valves *c*, and securing to said bar hooks or slide F or I, by which the grain or compost is agitated and caused to escape, either in a continuous supply or at intervals, substantially as described.

No. 17,581.—FREDERICK MOEHLMANN, of Belleville, Ill.—*Improvement in Machines for Sowing Grain in Drills.*—Patent dated June 16, 1857.—The nature of the invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a double chambered hopper, nor a turning reversible partition for separating the chambers of the same.

Neither do I claim broadly the use of a distributor composed of two circular slotted plates, one placed above the other and one stationary, and the other capable of turning irrespective of the position of the slots in said plates relatively to one another, and the form of the slot in the upper plate.

I *claim* having the curved slot F of the upper stationary plate H in the form of a scroll or letter "C," and the slot E of the lower plate I arranged in such relation to the same that, as the lower plate turns, the seeds, in order to escape as they are forced along on a curve by spurs G of the turning plate, shall be compelled to take a direction towards the axis of the plate, and thus be saved from being cracked

or broken by being compressed between the terminations of the upper and lower slots, substantially as set forth.

No. 16,542.—GEORGE HALL, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast*.—Patent dated February 3, 1857.

Claim.—The combination of the hinged and adjustable dash-board F with the working fingers *n* and exit openings *c*, for the purpose of taking the grain from the hopper C and scattering it broadcast, substantially as herein set forth.

No. 17,429.—D. HALDEMAN, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast*.—Patent dated June 2, 1857.—

The position of the graduating piece G, which can be adjusted by means of slide *b*, will regulate the discharge of the seed. By operating hand lever L, the reciprocation of the scatterer S moves the pins *i* within the recesses *d*, and prevents the packing of the seed. The seed from the hopper H drops upon the inclined surfaces *n*, which serve to distribute the seed evenly over the ground.

The inventor says: I am aware that vibrating scatterers with upward projecting pins have been used in connexion with the bottom of the hopper, but incapable of vertical movement.

I am also aware of the notched bars for graduating the seed discharge.

I do not claim these devices of themselves.

But I *claim* the vertically adjustable graduating bar G, with recesses, as described, in combination with the vibrating scatterer and agitator connected therewith, when said parts operate together as set forth.

No. 17,440.—A. C. MILLER, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast*.—Patent dated June 2, 1857.—

The seed in hopper A rests on the two hinged pieces H, and as the bars B and C are vibrated, the fingers C and E cause the seed to pass out through the openings G; and as the seed rests upon the pieces H, the bars B and D are not encumbered by the weight of the seed, thereby ensuring a free action of said bars, and diminishing the friction caused by their movement.

Claim.—In combination with the adjustable bottom K, and its openings G, and the stirrers D B, the secondary hinged bottom composed of the two pieces H H, with their openings *m*, the whole being combined in manner and for the purpose set forth.

No. 18,439.—WILLIAM A. CHAPIN, of St. Johnsbury, Vt.—*Improvement in Machines for Sowing Seed Broadcast*.—Patent dated October 20, 1857.—This invention consists in making the dispensary tubes F F in two or more parts, so that they can be lengthened or shortened according as the specific gravities of the different kinds of seed to be sown at the same time may require, in order that they may be sown over all the ground, and leave no parts where one kind of seed shall not reach, by means of its less specific gravity, as far as another of greater specific gravity, the lighter being thrown with sufficiently

greater force by passing through the lengthened tube which, from its end revolving in a larger circle in the same time as the end of the short tube, has consequently greater centrifugal force, which will be imparted to whatever passes through it. This invention further consists in introducing into the dispensary tubes a shaker agitator W, which, by suitable mechanism, is caused to vibrate; so as to prevent lime, ashes, &c., from clogging the arms or tubes when they are being sowed.

The inventor says: I disclaim the horizontal rotating arms or tubes, with their valves and adjustable cam.

But I *claim* the extension tube F and shaker W, when arranged substantially in the manner and for the purposes described.

No. 18,495.—JACOB BOYERS and DAVID S. GREER, of Granville, Va.—*Improvement in Machines for Sowing Seed Broadcast*.—Patent dated October 27, 1857.—In using this machine the seed from the hopper drops through at the point *i*, which is between the centre of the axle A and permanent board D. The axle has a spiral flange *n* arranged around its perimeter, and the grain falling upon this axle from the hopper is carried around between the axle and the board D, until it drops upon the receiving board E; and as the axle continues to turn, its worm or spiral flange is sweeping the grain off at the edge of the board E, whence it drops to the ground and may be harrowed in. Should the machine strike any obstruction, or be moving over rough ground, it would not, by the jar, spill or throw out any of the grain, as it must all pass forward of the axle and cannot pass out faster than the spiral on the axle moves and brings it to the edge of the board E, and as the spiral touches every portion of the edge of the board it delivers the seed in uniform quantities.

The inventors say: We are aware that spirally grooved or fluted cylinders have been placed under seed hoppers to act as distributors; this we do not claim, as they are inefficient, and the seed too readily flies off by any jar of the machine.

But we *claim*, in combination with a seed hopper, an encased, spirally flanged roller or axle, which receives, carries around, and delivers the grain in uniform quantities at the edge of the receiving board without being affected by the jar of the machine in passing over the ground, as set forth.

No. 16,807.—GEORGE MORTON RAMSAY, of New York, N. Y.—*Improvement in Steam Spades*.—Patent dated March 10, 1857.—The spades J¹ are hung to the crank pins I¹, and the spades J to the crank pins I. The cog wheel G imparts motion to the pinions H H. As these pinions are fast upon crank axle I I¹ the latter will be made to revolve, and the spades J J¹ will alternately be brought into action.

Claim.—The alternate spades J, in combination with the double crank shafts I, constructed, arranged, and operating substantially in the manner and for the purpose set forth.

No. 18,479.—WILLIAM E. WARD, of Portchester, New York.—*Improvement in Machines for Spading Land*.—Patent dated October 20, 1857.—In this invention the entire machine is propelled in the field

in any direction required, and turned at the will of the attendant; and the same power which does this operates a series of spades which enter the land each in succession, cut into it in the arc of a circle, and, after cutting down to the required depth, suddenly throw up the cut slice against a shield plate, so as to reverse it, and at the same time break it up, so that when it falls down it will be thoroughly disintegrated, the forward movement of the machine determining the thickness of the slices to be cut by the spades.

The inventor says: Having described the mode of construction which I have planned for the application of my invention, I do not wish to be understood as limiting my claim of invention to such mode of application, as other and equivalent modes of construction may be substituted. Nor do I wish to be understood as limiting myself to the use of the several parts of my invention, as some of these may be used in connexion with substitutes for the others.

I *claim* the mode of operation of the mechanism substantially as described, for imparting the cutting action to the spades, as set forth.

I also claim the mechanism for tilting the spades, substantially as described, in combination with the mechanism for giving the cutting action to the said spades, substantially as described.

I also claim, in combination with the spades operated substantially as described, the shield plate, substantially as described, for aiding in disintegrating and reversing the slices as they are thrown up by the spades, as set forth.

I also claim, in combination with the spades operated substantially as described, the yielding or springing part of the levers for imparting the digging or cutting action to the spades, and the yielding or springing part of the tilting levers, as set forth, and for the purpose of preventing the mechanism from being broken, when the spades meet with any obstruction, such as stones.

No. 18,302.—SAMUEL SHEPHERD, of Nashua, N. H.—*Improved Method of Stemming and Polishing Peanuts*.—Patent dated September 29, 1857.—In the drawings, A is the frame of the machine in suitable bearings at *a*, upon which is supported the shaft B: The shaft B is placed at a proper inclination, descending from the front to the rear of the machine, for the purpose of feeding the nuts through. In operating, the nuts, as they are beaten from the vines, are run from the hopper M into the inside of the cylinder G, when the two cylinders being revolved in opposite directions, the nuts are rolled over between the cylinders, and their stems are torn off by the teeth upon the cylinders F and G (the teeth of the two cylinders travel at such a distance that they do not crush the nuts, but their rough, curved edges catch and tear off the stems); the clean nuts pass over a suitable apron out of the machine at N, falling over a current of air from a fan O, which is driven by a belt from the main shaft. P is a cylinder on shaft B, furnished with rows of teeth similar to those on the cylinder F; beneath is placed a semi-circular box or concave R, in which are cut slits *i*, through which pass or travel the teeth of the cylinder as it revolves. The teeth are cleaned by passing through a

series of brushes S at one side, secured to a frame in the path of the teeth.

The inventor says: I lay no claim to any specific machine, except when used for the purpose herein described.

I claim stemming and polishing peanuts, in the manner set forth, by means of the machinery described, or the substantial equivalents thereof.

No. 17,207.—E. G. CUSHING, of Dryden, N. Y.—*Improvement in Straw Cutters*.—Patent dated May 5, 1857.—The straw to be cut being placed in the feed-box A, motion is given to the wheel E, and as the cutter F passes over the edge of the cutter *d*, said cutter will be raised and gradually moved towards the cutter F, in consequence of the tappet *f* acting upon projection *c*. A vibratory motion is given to the head C, the tappet *f* raising the head C, which falls by its own gravity, aided by spring *h*, each time the tappet leaves the projecting bar *c*. As the box C descends, the pawl H, in consequence of catching into the ratchet G, causes the lower roller E to rotate a certain distance, by which the feed motion of the rollers E D is effected.

The inventor says: I do not claim a knife or cutter attached to a rotating disk or cutter-wheel, for they are old and well known.

Neither do I claim the feed-roller irrespective of the means by which they are operated.

But I claim, first, the disk wheel E¹, with cutter F one or more attached, in combination with the vibrating head or box C, in which the feed-rollers D E are placed, and the "ledger" cutter *d* attached, the above parts being arranged and operating conjointly, as shown and set forth.

Second, operating the feed-rollers by means of the ratchet-wheel G and pawl H, when used in connexion with the vibrating head or box C, and arranged substantially as shown and described.

No. 17,850.—JONATHAN L. SULLIVAN, of Lexington, N. C.—*Improvement in Straw Cutters*.—Patent dated July 21, 1857.—The straw is placed within the feed-box B, and motion being given to the shaft E, the roller C feeds the straw to the knives, the knives *a* cutting the portion of the straw which passes underneath the cutting edges at right angles, and the cutters *b* cutting the portion that passes over the end of plate *a* at right angles with them.

Claim.—The two sets of knives G *b*, and slotted plate *a*, combined and arranged so as to operate conjointly, as shown for the purpose set forth.

No. 18,084.—AURY G. COLE, of Worcester, Mass.—*Improvement in Straw Cutters*.—Patent dated September 1, 1857.—As the shaft *c* is rotated, a rotary as well as vibratory motion is given to shafts C and F, by means of the eccentrics *a b*, and the bed L and knife K will be operated in such a manner as will cause them to feed forward, and cut through any hay or straw which may be projected from trough B.

Claim.—The improved straw-cutting machine, constructed so that its bed and knife shall each operate with a compound motion, pro-

duced by a lever, crank, fulcrum rod, and guides, arranged so as to operate together, substantially as specified.

No. 18,146.—PORTER HILL and CHARLES E. JONES, of Millport, N. Y.—*Improvement in Straw Cutters*.—Patent dated September 8, 1857.—The straw being placed in the compartments F, between the rims I and E, motion is given to shaft L, and the straw extending beyond the ends of the cylinders is cut by the disk knife H. The feeding of the straw is performed in the following manner: As the cylinder revolves, the movable rack bar *m* is reciprocated, it being operated upon by the oblique stationary ring J; as the movable bar *m* is thrown forward, the dog *o* holds the rack bar *m*, while the dog *o*¹ is drawn over bar *l*, but when the bar *m* returns, the dog *o*¹ is held on the stationary bar *l*; and prevents the follower G, against which the end of the straw rests, from being drawn back again; thus each revolution feeds the follower G a certain distance. The amount of feed can be regulated by setting the ring J more or less oblique, which can be done by means of set screw *r*.

Claim.—The combination of the rotating knife or cutting disk H with the series of revolving chambers F, arranged around a central shaft or axis, in such a manner that the revolutions of the same shall bring the straw in each successively between the edge of the knife and periphery of the chambers.

We further *claim* the manner of feeding the straw to the knife, by means of the eccentric *j*, the permanent and movable ratchet bars *lm*, and dogs *o o*¹, so arranged as to crowd the straw forward only when the chamber F by descending is clear of the action of the knife, and also be capable of adjustment to different degrees of feed, as set forth.

No. 18,624.—JESSE BALL, of Barnesville, Ohio.—*Improvement in Straw Cutters*.—Patent dated November 17, 1857.—This invention operates as follows: The lid K is raised by turning the button *t* free from the notches of the sides of the box, and the compress L is removed therefrom, and the box filled, or the necessary amount of the stuff or article M to be cut placed therein. The back end of the article M is then placed between the two jaws *u v* of the compress, the teeth of the upper jaw being forced into the stuff M, and the button turned round, and its ends fitted in the proper notches in the sides of the feed box, so as to bear with a proper degree of pressure on the compress L. The springs S press the front end of the lid K on the stuff M. The lever D is then worked up and down, and the projection F on the lever E actuates the lever G, which in turn operates the rack H, and this rack, by means of the pawl 1, shoves the compress, and consequently the stuff M, towards the knife at every upward stroke of the frame C, so that as the knife descends it will cut the straw into pieces of a length corresponding with the length of the stroke of rack H. The pawl 2 and rack J serve to retain the compress during the backward movement of the rack H. When the compress has reached the front end or mouth of the feed box, the lid K is raised, the box refilled with stuff, the compress replaced in the box, and attached to the stuff as before, and the operation repeated.

Claim.—The reciprocating rack H, operated from the knife frame C, through the medium of the lever E, projection F, and bent lever G, in combination with the compress L, adjustable and pressure lid K, and stationary rack J, the whole being arranged to operate conjointly as shown, for the purpose set forth.

No. 18,887.—MOSES CLEMENTS, (deceased,) late of Worcester, Mass.—*Improvement in Straw Cutters.*—Patent issued to WILLIAM T. CLEMENTS, of Buckland, Mass., administrator of the estate of said MOSES CLEMENTS, (deceased.)—Patent dated December 15, 1857.—A A are the side pieces of the frame; B, a cross girt; C, the crowning bed piece, to which is attached the stationary knife D, adjusted by means of the screws a a, having a space between the crowning bed piece and stationary knife, for the gravel and dirt to fall through; also having a lip on the upper edge of the knife; E is a revolving knife holder, adjustable by means of the screws b b bearing against the boxes of the same, having two spiralling knives F F attached to the holder, and G a pulley attached to the same. H is the lower feed roll, on the end of which is pulley J, the upper feed roll K, with springs L to press it down. M is a cord on pulleys G and J to connect the revolving knife holder with the feed rolls; N is a crank by which the whole is operated.

Claim.—The combination of the revolving knife or knives, and the stationary adjustable knife and crowning bed piece, with feed rolls, all substantially as shown and described for the purposes set forth.

No. 18,946.—WILLIAM BARRET, of Stephenstown, N. Y.—*Improvement in Straw Cutters.*—Patent dated December 29, 1857.—This improvement consists of a box A to hold the straw, mounted upon legs in the usual way, with two uprights B B at the front end of the box. Against each of these uprights is placed a bar of iron C D, kept off from the surface of B, so as to allow the cutter or knife E to pass behind the bars, acting as guides to direct the knife in its movements.

The upper edge of the knife, with its brace g, passes between a horizontal bar h, lying opposite the end of the bottom of the box, and connecting the bars C and D, the straw being clipped off between the box and the bar. The knife is operated by a handle H attached to a broad or flat piece of wood or metal K; the further end of K is pivoted to a link L at n, which drops down a short distance, and is also pivoted to the front of upright B at f; the end of K, next to the handle is pivoted to rod G at m.

On the foot board is placed a spring S, arranged to be under the end of the bar G; its object is to catch the downward stroke, and assist in its upward movement, relieving the operator during that movement.

Claim.—The combination of guage K, and its handle H, with the bar G, and the link L, and spring S, by means of which an oblique drawing as well as downward movement is given to the knife, substantially as set forth.

No. 18,369.—DAMON R. AVERILL, of Pulaski, N. Y.—Assignor to Himself, JAMES F. DAVIS, and HENRY TWITCHELL, of same place.—*Improved method of balancing Threshing Cylinders.*—Patent dated

October 6, 1857.—This invention consists in hanging weights in threshing cylinders, in circular slots in the cylinder ends, in such a manner that their position may be changed, so as to balance the cylinder, while at the same time their centrifugal force caused by the revolution of the cylinder cannot throw them out of place.

In the drawings A and B are the slots; C C are the weights or sliders, having an inner part D, which moves around upon and projects from the inner surface of the end of the cylinder.

Claim.—The inventor says: The particular improvement which constitutes my said invention, and which I claim, is, hanging the movable weights or sliders in circular slots, concentric with the axis of the cylinder, by which means the centrifugal force of the cylinder is prevented from throwing them out of position, as set forth.

No. 17,062.—J. C. WILSON and T. G. WILSON, of Cedar Hill, Texas.—*Improvement in Machines for Threshing Grain in the Field.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: "We make no claim to the threshing and cleaning mechanism, nor do we claim endless conveyors, as such; we further disclaim the employment of endless conveyors for receiving cut grain as it falls, such as are shown in certain combined reapers and threshers.

But we *claim* the arrangement with a travelling thresher, as described, of an endless gatherer and conveyor armed with hooked teeth in rows conforming to the surface passed over, and operated as specified, to lift cut grain from the swath, and deliver it to the threshing mechanism, the relative position of the several parts being as set forth.

No. 18,436.—THOMAS L. COLVILLE, of Wilmington, N. C., and SAMUEL SHEPHERD, of Nashua, N. H.—*Improved Threshing Machine for Beating of Peanuts from their Vines.*—Patent dated October 20, 1857.—In operating this machine the nuts, with the vines to which they are attached, are drawn in by the feed rolls G, and are operated upon in succession by the toothed cylinders B C D and E, by which the nuts are separated from the vines, the nuts falling through the screen I on the inclined aprons K, and thence passing out of the machine at f, while the vines pass out of the machine at M.

The inventors say: We do not claim the described machine, or any portion thereof, when used for other purposes than those designated.

But we *claim*, first, the machine for beating peanuts from their vines, consisting essentially of the elastic feed rolls G, the screen I, and the beating cylinders B C D and E, operating in the manner substantially as set forth.

2d. We *claim* the elastic feed rolls G, operating in the manner substantially as described.

No. 18,455.—ADOLPH JUNGE, of Belleville, Ill.—*Improvement in Endless Aprons of Threshing Machines.*—Patent dated October 20, 1857.—The engravings and claim show the nature of this improvement.

Claim.—The inventor says: I *claim* making the slats of the carrier *o o* substantially in the form shown and described, and connecting them by means of a flat band inserted in their ends, so that they will retain and carry the threshed grain, and protect the bands that connect them from being worn by the pulleys that operate the carrier.

No. 18,598.—ANDREW T. NUTE, of Roxbury, Mass.—*Improvement in Mode of Protecting Trees from Canker Worms, &c*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The improved method of protecting a tree from the ascent of canker worms, the same consisting in applying finely pointed metallic wires, or one or more strips of card teeth to the same, substantially as described.

No. 17,839 —ELMORE JOHNSON, of Winchester, Mass.—*Improvement in Hog Troughs.*—Patent dated July 21, 1857.—When the cover D is in the position represented in figure 1, the animal has free access to the trough A; but when the cover is turned to the position represented in figure 2, the animal is shut out from the trough, and in this position the feed can be introduced from outside.

Claim.—An elongated trough or board and a quadrantal cover arranged or applied together, and in an opening in a frame, wall, or the side of a pen or sty, and made to operate substantially as specified.

No. 16,447.—JOSEPH MONTGOMERY and JAMES MONTGOMERY, of Baltimore, Maryland.—*Improvement in Winnowing Machines.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of an adjustable sieve M above the auxiliary screen box D, when arranged in combination therewith, in such a manner as to separate the large impurities before the grain is subjected to the action of the blast, in order to render said auxiliary screen-box more efficient in its action, and thereby allow it to be made as limited in extent as desirable, substantially as set forth.

No. 18,867.—JOHN SHIPLEY, of Princeton, Wisconsin.—*Improvement in Winnowing Machines.*—Patent dated December 15, 1857.—This invention consists in combining with the shoe B a number of bent pivoted levers E, in such a manner that, as the shoe vibrates or reciprocates from side to side, the outer ends of the levers will be brought into contact with the sides or fixed portions of the machine, which action will cause the inner ends of the levers to be thrown violently upward against the bottoms of the screens C D, thus producing a sudden jarring of the screens in an upward direction.

Claim.—The combination of the levers E with the shoe, when the said levers are arranged and operate in the manner as described.

No. 17,071.—ISAAC K. BENNETT, of Narrows, Pennsylvania.—*Improvement in Ox Yokes.*—Patent dated April 21, 1857.—This ox yoke serves to regulate the draught of the animals in the following manner:

when one ox crowds against his mate he will turn his bow block L in such a manner as to cause the pinion *a* on its pivot to travel on the rack geared thereon towards the centre of the yoke, thereby diminishing the distance from the centre, and giving his mate an advantage in the leverage proportional to the extent to which he turns.

Claim.—The pinions *a a* on the pivots of the low blocks in combination with the racks into which they gear, operating substantially in the manner and for the purpose specified.

II.—METALLURGY.

No. 18,485.—JOSEPH A. BERTOLA, of New York, N. Y., assignor to Himself and JOHN STAGG, of the same place.—*Improved Amalgamator.*—Patent dated October 20, 1857.—This machine, for amalgamating gold and silver ore with mercury, consists of a tub secured upon a strong frame, in such a manner as to be capable of being tilted over, or rock on an axis. The sides of this tub are made of wood or metal, but the bottom always of metal. In this tub there is a muller, which is driven round by a shaft, but so as to allow its weight to rest upon the bottom, and in such manner also as will permit it to be readily disengaged at the times when the tube is to be tilted to empty its contents. Two openings for emptying are employed: the first is to be used to draw off the water and refuse, and the other to empty the amalgamated mercury.

The inventor says: I *claim* the machine described for effecting the complete amalgamation of precious metals from ores containing such metals, consisting of a double concave muller, with grooved bottom, extending diametrically from side to side of the tub A, leaving spaces or chambers on each side of it, and revolving in said tub upon a central and vertical axis, substantially as set forth.

No. 16,525.—OTIS BRIGHAM and SETH E. BRIGHAM, of Fitchburg, Mass.—*Improvement in Anvils.*—Patent dated February 3, 1857.—In using the secondary horn C, the smith lays that part of the shoe which he desires to have bevelled in the proper groove of it, and he strikes on the shoe with the hammer until he has caused it to be driven down into the groove, and to take the form thereof. The object of bevelling the inner edge and the corks of a horse-shoe is, that the snow, which becomes packed in it, may easily be thrown out from the shoe by the movements of the feet of the animal.

The horn can be removed, and the anvil be used for any other purpose.

Claim.—Combining with the anvil the secondary movable grooved horn, and mechanism for confining the latter to the former, the grooved horn being for purposes as specified.

No. 17,078.—NATHAN S. CLEMENT, of Worcester, N. Y.—*Improved Awl-Haft*.—Patent dated April 21, 1857.—The square end of the awl D is inserted within a suitable recess of the slotted screw C, and secured to it by screwing the nut B on to it. The recess E in handle A serves for the reception of spare awls.

Claim.—An awl-haft constructed as set forth, having the chamber for spare awls on the same end with the gripping jaws, and when closed in the manner specified.

No. 17,556.—RICHARD H. COLE, of St. Louis, Mo.—*Improved Machine for making Axe-Poles*.—Patent dated June 16, 1857.—The end of a heated metallic bar is inserted into the machine when the parts are in the position represented in fig. 2, and the blank is cut from said bar by the vertically acting cutter e^1 , the bar resting on the projection p of the die-box. As the dies and punches are moved towards each other, the edge p^1 presses the blank against the side v , holding it tightly; and the punches b e , moving towards each other, punch the metal, which is held and compressed by the movable sections c d of the die-box. The die-boxes and cutters are moved and operated by levers and cams, which need no further description.

Claim.—1st. Constructing a die-box of three permanent and three movable sides, arranged and operating substantially as set forth.

2d. Arranging the vertically acting cutter e^1 , and the projecting portions of the sections p t of the die-box, or their equivalents, in such a manner in relation to the other parts of the machine, that the said enumerated parts will operate substantially in the manner set forth.

3d. Combining the oval punches b e with the opposite movable sections c d of the die-box, when the said die-box is furnished with a sharp-edged side p , which acts in conjunction with the said oval punches, in converting a rectangular shaped blank into a properly shaped axe-pole, substantially as set forth.

4th. Cutting a rectangular shaped solid blank from the end of a bar, and then driving said blank into a die-box, and converting it into a properly shaped axe-pole, substantially in the manner set forth.

No. 17,639.—JAMES N. ROCKWELL, of Napanock, N. Y.—*Improvement in Hardening Axes, &c.*—Patent dated June 23, 1857.—The apparatus being in the position represented in fig. 1, the door E is opened and the heated axe G is hung on the peg e ; by turning pinion d , the box B is lowered into the water in box A, and the valves b , coming in contact with the bottom of box A, are moved in the position represented in fig. 2, and the water passes through passages a into box B and cools the axe. On raising the box B from the water, the tops of valves b come in contact with the stops F, and the passages a are closed.

The inventor says: I do not claim broadly the hardening of axes or other tools by admitting a stream of water upon their surfaces, as such methods have been long known.

I *claim*, in axe-tempering devices, providing the box or holder B, in which the axe is placed, with one or more valves *b b*, arranged and operating substantially as described.

No. 18,206.—DAVID A. J. LAMSON, of Cherry Valley, Mass.—*Improved Belt Tool*.—Patent dated September 15, 1857.—The implements of which this tool is composed are: the punch E; the square four-sided wrenches, which are formed of the notches D and L, when the jaws C are closed; the screwdriver G; and the awl H.

The inventor says: I do not claim broadly the combination of a number of implements together, so as to form a complex or universal tool, irrespective of the construction and arrangement of the parts forming such a tool.

But I *claim* the combination of the several tools specified in one instrument, when constructed and operating substantially as described.

No. 18,452.—DAVID HOWELL, of Louisville, Ky.—*Improved Machine for bending Flanges on Boiler-Heads*.—Patent dated October 20, 1857.—This invention consists in the use of an annular bed or anvil C, in connexion with rollers E E attached to traversing levers G and H, whereby flanges may be turned or bent down both on the outer and inner edges of an annular metal plate F, for the formation of boiler-heads, flue-rings, and the like.

The inventor *claims* the employment or use of an annular bed or anvil in connexion with a roller or rollers attached to a traversing lever in any proper way for the purpose of bending down the inner and outer edges of annular plates, and thereby forming the flanges of boiler-heads, flue-rings, and the like, as set forth.

No. 18,058.—LEWIS RAYMOND, of New York, N. Y.—*Improved Bending-Machine*.—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

Claim.—The combination of three rollers A B C, convex and concave, substantially as set forth, so as to bend sheet metal transversely and longitudinally at one operation.

In combination with the above, also a supporting roll D, located, arranged, and driven, substantially as set forth.

No. 17,128.—ROBERT KILLMER and JOSHUA W. WILLIAMS, of Newtown, Pa., assignors to ROBERT KILLMER, of the same place.—*Improvement in Blacksmiths' Butterises*.—Patent dated April 21, 1857.—The two-edged bits C can be secured within the flanges B of the plate A, and thus, when the edge of a blade becomes dull by striking against a nail in the hoof of the animal, the operator can readily insert a new blade without delaying the work by sharpening its tool.

Claim.—The construction of butterises with removable two-edged

bits or blades secured to a plate A having rectangular sides by half flanges B B and a thumb-screw D, or when said sides are tapering by double flanges only; the whole being arranged and operating as set forth

No. 17,284.—HARTWELL KENDALL, of East Dorset, Vt.—*Improvement in Blacksmiths' Strikers*.—Patent dated May 12, 1857.—By turning crank K, shaft E is turned, and cord 7 winding up on said shaft raises lever K, which is turned on its fulcrum x , the pin y of which depresses the springs $s p$; the movement of these springs raises hammer H. The hammer H may now be readily operated by pressing on treadle b , which, by the connexion of rod 1 2 brings down the hammer each time the treadle is depressed.

Claim.—The use of the springs $s p s^1 p^1$, when constructed, arranged, and operating, in the manner and for the purpose specified.

No. 17,243.—HORACE VANSANDS, of Middletown, Conn.—*Improvement in Blind-Fastenings*.—Patent dated May 5, 1857.—This fastening is inserted in a horizontal position in the shutter or blind, and fastened therein by means of the screw on shell E. When the shutter is shut, it is kept in place by hook g passing round a staple in the sill of the window; and when open, it is kept in place by part of the hook h passing round and holding to a suitable catch inserted in the building, the spiral spring on rivet B forcing the hooks against their respective catches.

Claim.—The attaching of the blind-hook by means of a screw or rivet between and in the recess of the two shells or case, as set forth.

No. 18,157.—STUART PERRY, of Newport, N. Y.—*Improved Bolt for Safes*.—Patent dated September 8, 1857.—A represents the door of a vault or safe; B the door frame; and C a lock of any description. If the lock C should be forced off the door either by means of powder or by a punch, it comes in contact with bar K, which is bolted to the door at b , causing the free end c of said bar to move; the bolt F is then in position represented in fig. 2; as soon as bar K is moved, it comes into position represented in fig. 3, withdrawing pin d from hole f , when the spiral spring G shoots the bolt out from its casing, and spring a causes bolt H to shoot into recess i , thus securing bolt F in the position shown in fig. 3, which then bolts door A.

Claim.—So combining a safety bolt with the lock of a bank, vault, store, or other door through the means of a bar or trigger, as that the forcing of the lock by any means from the door shall trip or release the safety bolt, and allow it to securely fasten or lock said door, substantially as set forth.

No. 17,660.—JOEL R. BASSETT, of Cincinnati, O.—*Improved Machine for Making Bolts and Rivets*.—Patent dated June 30, 1857.—The stock $b c$ being made to rotate in the direction of the arrow, a rod is placed in the cavity u of the rest, and, being held with its end in contact with the face of the clamp stock b , enters readily the first aperture f which is presented. The stock $b c$ continuing to rotate

the clamp *e*, by means of the friction roller *p*, is made to press on the portion of the rod within its grasp, while the downward pressure of that within the rest *j* depresses the latter, causing the jaws *k l* to contract tightly on the end of the rod, thus effectually preventing its expansion, while the clamp is severed therefrom by the rotation of the clamp stock. The roller *p* continuing to hold the clamp *e* tightly compressed, the vertical face of the plate *l* now forms a support to the point of the blank, while the header *s*, being pressed against the inclined face *o* of the cam, is thereby impelled forward in such a manner as to form the head of the rivet; after which the formed rivet is liberated by projection *r* impinging against the roller *p* and retracting clamp *e*.

Claim.—First. The clamps *e f d r t*, constructed substantially as described, and arranged on the periphery of a rotating stock in such manner as to be readily accessible for inspection and replacement, in combination with the friction roller *p*, for the clamping and releasing of the bolt or rivet.

Second. In combination with the above, the yielding rest *i j*, and divided cutter *k l*, by means of which the rotation of the clamp stock severs the blank, the end of the rod being contracted during the act of separation, and afterwards released by the retraction of the rest and cutter *i j k*.

Third. The arrangement of heading dies *s*, and adjustable stationary cam *n o*, in combination with the clamps and the perpendicular face of the plate *l*, substantially as and for the purposes set forth.

No. 18,534.—RICHARD H. COLE, of St. Louis, Mo.—*Improved Machine for Making Bolts*.—Patent dated November 3, 1857.—The engraving and claim show what the nature of this invention is.

Claim.—The inventor says: I *claim* pressing the head on the bolt in a moving die-box or die, and against a yielding tool or support, as set forth, by the motion of the bolt instead of the tool, as described.

I also claim the combination of the spring *X*, the crotch *a*, and the jaws *s*, so that the crotch *a*, or its substitute, in pressing the jaw *s* forward, shall act against a yielding medium for the purpose specified.

I also claim the internal construction of the gripping tools *x*, as shown at *Z*, whereby each of the said tools in closing shall form one fourth of the point on the bolt, thus making half of the point when closed.

I also claim finishing the point on the bolt, that is, completing it by an off-set made on the side of the knife *N*, having a form in it to correspond with the form in the end of the tools *x*; the said off-set to be below the cutting edge of the knife a distance equal to the diameter of the point of the bolt when finished, so as to make the point of the bolt like the frustum of a cone.

No. 18,193.—H. W. COLLENDER, of New York, N. Y.—*Improved Socket for Bolts*.—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Having a disk or follower *d* placed within the socket, and

connected with a spring E, arranged in any proper way so that, as the bolt A is withdrawn from the socket, the spring will press the disk or follower against the upper or outer end of the socket, and close the orifice thereof, for the purpose specified.

No. 18,775.—WILLIAM SELLERS, of Philadelphia, Pa.—*Improved Machine for Threading Bolts*.—Patent dated December 1, 1857.—The object of this invention is to avoid the necessity of reversing the motion of cutting dies, or of stopping the machine to change the bolts, and to so arrange the die and tap-holder as to admit of greater facility in changing from one sized thread to another, or to tapping nuts.

The inventor says: I *claim* the use of a die-box and cams, substantially as described, when these are so arranged as to be capable of revolving about a common centre at different velocities, for the purpose of opening or closing the dies.

I *claim* arranging the cams so as to leave open spaces between them, substantially as described, in combination with the die-box and dies, as described, to facilitate the changing of the dies.

I also *claim* the mode of attaching the tap-holder to the revolving die-box, substantially as described.

No. 17,641.—WILLIAM SELLERS, of Philadelphia, Pa.—*Improvement in Boring-Mills*.—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Revolving the face-plate M of boring or turning mills in a support R as near as convenient to the periphery thereof, substantially as described.

Also, the adjustable step or centre bearing k, when it is combined with an outer support, substantially as described.

No. 16,564.—MARY A CANNON, of Warren, R. I., (administratrix on the estate of John Cannon, deceased,) assignor to THE NEW YORK AND BROOKLYN BRASS COMPANY, of New York, N. Y.—*Improvement in Brass Kettle Machine*.—Patent dated February 3, 1857.

The inventor says: I do not claim the spinning of vessels by hand pressure, when the spinning tool is both carried and pressed up against the metal by the workman, as this is the old plan, long known before any mechanism for carrying the tool was invented.

I distinctly disclaim those parts in my machine which are found in Hayden's patent, or in Miller and Whitehead's patent, or in any other machine for making brass kettles.

But the combination of a hand-lever for effecting the spinning by hand pressure, with a slide rest which is moved by mechanism, is, to the best of my knowledge and belief, a new combination, possessing great and important advantages: Therefore—

Disclaiming movable slide rests in machines for spinning brass kettles, and also disclaiming hand pressure in itself considered for such purposes,

I *claim*, 1st. Elongating the handle of the tool q, in the lever P, to be operated by hand, when the said tool is moved up to the work by

mechanism, in the manner and for the purposes substantially as set forth.

2d. The arrangement of the shaft *e*, substantially as described, whereby it is made to serve for the driving of the sliding bed I, and also as a pivot upon which the slide H, which carries the said bed, is adjusted, thereby enabling the adjustment of the bed to be effected without affecting the driving gear.

No. 18,111.—CHARLES TAYLOR, of Little Falls, N. Y.—*Improvement in Casting Bearings in Iron Wheels*.—Patent dated September 1, 1857.—The movable cap-piece A, being placed upon pin B, and secured to it temporarily, the pin is placed within the core print of the newel D; the rope F is then placed upon the newel, and the cap A permits the pin B to enter the core print of the cope F, without injuring said core print.

Claim.—The employment of the bevel or oval cap-piece A, or its equivalent, when it is used in connexion with the pins B B, or their equivalent, and made to operate in the manner and for the purposes described.

No. 18,481.—DANIEL A. WEBSTER, of New York, New York, and GEORGE F. BURROUGHS, of Lumberton, New Jersey.—*Improved Core Spindle for Casting*.—Patent dated October 20, 1857.—The nature of this invention consists of an approved collapsing core or spindle, (for casting hollow tubes, either cylindrical or polygonal, with either one end closed or both open,) formed of segmental staves, adjusted by followers which operate against inclined planes upon internal surfaces of said staves, and which are governed by a transverse shaft running through the centre of the core spindle and passing through two heads.

Claim.—The inventors say: We are aware that core spindles have been made with a wedge stave secured at either end, but do not consider such a mechanism at all practicable in casting heavy work.

We do not claim, broadly, a collapsing core spindle, as we know their use is common; nor do we claim a hollow cylinder composed of staves, or their equivalent.

But we *claim*, first, the combination of a transverse centre shaft with the disk followers B B, and inclined projections D D, substantially as and for the purpose set forth.

Second. The bottom head E¹, constructed as described, in combination with the shaft A and followers B B, substantially as described, whereby I am enabled to cast one end of the tube closed; the whole arranged as set forth.

No. 18,924.—A. A. NEEHDAM, of Rockford, Illinois.—*Improvement in Casting Car-Wheels*.—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim, broadly, a rotating mould for casting, for this has been previously used for casting pipes.

But I *claim* casting the wheel from two different kinds of iron—hard and soft—the hard iron to form the tread, and the soft to form the hub and centre of the wheel; and properly disposing the two kinds

of iron within the mould, as desired, by giving the same a rotating motion, as shown and described.

No. 17,109.—MORTIMER NELSON, of New York, New York.—*Improvement in Moulds for Casting*.—Patent dated April 21, 1857.—These moulds are made by making electrotype casts B of each half of the article to be moulded; the casts B are then backed up with plaster of Paris C to the requisite thickness; the backing C is then coated with black lead and placed in a copper bath, and a sheet of copper D is deposited on the rear and ends of the backing, thus uniting the mould in a substantial manner.

Claim.—The described method of forming moulds for casting britannia and other metals, by backing up a thin metallic face with plaster, in the manner substantially as set forth.

No. 16,864.—MICHAEL H. SIMPSON, of Boston, Mass.—*Improvement in Machinery for Combing Wool*.—Patent dated March 17, 1857, antedated September 17, 1856.—In operating with this machine, the wool or fibrous material, as in the original machine of Couillard, is spread upon an endless apron B; and by means of the feed-rollers and a "licker in," it is taken from said apron and transferred to the main cylinder A; and during the revolutions of the same the fibrous material is subjected to the action of the workers and strippers situated above said card cylinder. Next, by means of the extra doffer L and stripper M, it is removed from the main card cylinder and laid upon the combing doffer I, by which it is thrown upon and amongst the teeth of the revolving comb N. From the latter, the longer fibres are drawn by the rollers U V, and from thence in the form of a sliver they pass through the condensing belt f, thence between the rollers h i and into the neck of the flyer, and are finally wound upon the bobbin.

The inventor says: I claim the combination and arrangement of an extra doffer L and stripper M, or equivalents therefor, with the main card cylinder, the combing doffer I, and the combing belt N; the whole being substantially in the manner and for the purpose as specified.

I also claim the described improved arrangement and construction of the draught rollers U V, with respect to each other and the combing belt N.

I also claim making the wires of the fringe belt W to extend below the table Z, and to run through a passage c formed between the part Z and the combing belt, or in the table, as specified.

I also claim combining with the curved plate R, when such is employed in connexion with the doffer I and the combing belt N, a steam-heating chamber S, or other suitable means of heating such plate, as set forth.

No. 16,688.—ANDREW LEONARD, of Kenosha, Wis.—*Improvement in Casting Skeins for Wagons*.—Patent dated February 24, 1857.—c represents the core and a the core-bar, which can either be adjusted by hand, as represented in figure 1, or its lower end can be imbedded into the pattern sand, so as to firmly support the upper portion of the core-bar and the core itself.—(See figure 2.)

Claim.—The method, substantially as set forth, of moulding and casting thimble skeins and other hollow conical castings in a vertical position from whole patterns, leaving their own cores of green sand, which were moulded in the hollow of the patterns around one end of long core-bars, so arranged and combined with the cores and with the solid sand in the flask, as to have the other end of the same bars sustain the core, or to render them adjustable by hand after the patterns are withdrawn and the mould completed, as specified; and of thus insuring the true position of the cores in the centre of their moulds, and making the casting perfectly true and seamless direct from the sand, substantially as described and shown.

No. 17,012.—HENRY R. REMSEN, of Albany, New York, assignor to WILLIAM J. NOYES and HENRY R. REMSEN, aforesaid.—*Improved Mill for Cleaning Castings.*—Patent dated April 7, 1857.—The hollow ware to be cleaned is placed in the grated partitions *m*, so that each piece shall be separated from the other, and, as the mill revolves, the shot, iron, or scouring material, will act effectually on the castings.

The inventor says: I do not claim making a revolving mill for cleaning hollow ware or other castings.

Nor do I claim any particular external form, or any mode of opening or fastening the doors.

I *claim* the use, in a horizontal revolving mill for cleaning castings or hollow ware, of open work, lattice, or grated partitions, parallel to, or in a line with, the axle, for the purpose of such compartments as I have described, substantially as set forth.

No. 17,814.—EDWARD F. WHITON, of Stafford, Connecticut.—*Improved Centering-Machine.*—Patent dated July 14, 1857.—The shaft *e* to be centered is inserted within two opposite notches of the holders *d*, and is secured within said holders by forcing them together by means of screw *J*. The pulley *D* being then rotated, the marker *p* is forced towards the end of shaft *e* by operating screw *n*.

Claim.—Arranging the laterally adjustable notched holders *d d* in such a manner in relation to the longitudinally adjustable spindle *C* and its pointed marker *p* as to enable the ends of shafts of various sizes to be centrally marked, substantially as set forth.

No. 18,490.—LAURISTON TOWNE, of Providence, Rhode Island.—*Improved Chain-Machine.*—Patent dated October 20, 1857.—The functions performed by this machine include the whole process of cutting the links from the strips of metal, and their subsequent bending and uniting, till the complete chain is formed. The engravings and claims set forth by the inventor will give an idea of the minutiae of this invention.

The inventor says: I *claim* the forming-guide for holding and transmitting the chain during the formation thereof, constructed and arranged as described, or in any other manner which will enable it to perform substantially the same functions.

I also claim giving to the forming-guide an angular movement upon

its axis, so as to present the chain to the successive links in such positions that the arms thereof will alternately interlock.

I also claim the double movement of the punch *m*—first, to give the outer bends to the links while depositing them upon the forming-guide; and second, to finally clinch them and force the chain downward to make room for the succeeding links, substantially as specified.

I also claim the arrangement and combination of the carrier *E*, die *m*, and the forming-guide, or their equivalents, so as to first bend the links inward near the extremities of the arms, and afterward to make the bends nearer the centre of the links, for the purpose specified.

I also claim the slender converging rods or holders *r r*, for holding down the top link while bending the first pair of arms of the link below up over it.

I also claim the arrangement and operation of the slides *a a*, or their equivalents, substantially as described, so as to bend and clinch the arms of each link successively by pairs, and cause the succeeding pair or pairs to overlap the preceding ones, or, in case the links have an odd number of arms, to cause the succeeding arms of each link to overlap the preceding ones singly in succession.

I also claim the fingers *p p*, operating as described, for the purpose of forcing and holding down the first pair of arms, so as to enable the succeeding pair to be lapped over them, substantially as specified.

No. 18,027.—LAURISTON TOWNE, of Providence, R. I.—*Improved Machine for Twisting Curb Chains*.—Patent dated August 18, 1857.—The chain is inserted between the stationary dies *m* and the vibrating die *N*; and motion being given the driving-shaft, the die *N* is caused to vibrate by means of pitman *I*, each vibration of the die twisting one link of the chain. The unfinished portion *a* of the chain is prevented from winding, by giving a counter motion to reel *G*, upon its shaft *E*.

Claim.—The combination of the vibrating spiral die *N* and stationary holding die plates *m m*, or their equivalents, arranged and operating substantially in the manner and for the purpose specified.

No. 17,694.—JAMES OLIVER and HARVEY LITTLE, of South Bend, Ind.—*Improvement in Chilling Plough Shares*.—Patent dated June 30, 1857.—The iron that first enters the mould runs directly to the edge, and under the chill; these portions are thus filled at the start of the operation, and the vapors created by the damp mould, the air, and other gases, are expelled gradually through the spout.

Claim.—The process described, consisting in placing the surface of the chill in such a position in relation to the other parts of the mould that the melted metal shall first come in contact with the chill at the edge of the share, in the manner and for the purpose specified.

No. 16,470.—GEORGE N. CUMMINGS, of Hartford, Conn.—*Improved Clamp for Soldering Spectacles*.—Patent dated January 27, 1857.—In using this instrument the eye-pieces *g* are placed upon the strips *b* and underneath the springs *d*, when they are pushed back against the

strips *c*; the nose-pieces *h* are then adjusted to the eye-pieces *g* so as to give them the proper shape, and are soldered to said eye-pieces.

Claim.—The use of the supporting strips *b c*, springs *d*, and brick *e*, arranged and operating in the manner and for the purpose set forth.

No. 16, 506.—ELBRIDGE WHEELER, of Marlboro', Mass.—*Improved Clamping-Machine.*—Patent dated January 27, 1857.—A represents the bed of the machine upon which the article to be punched rests. B the stationary jaw. The movable jaw D is brought up against the article to be punched by the screws E, and is composed of two portions, 1 and 2, which are hinged together in the middle at E, the outer ends of these pieces sliding beneath the clamps *a*; the jaw A is thus enabled to conform itself to articles of irregular width.

Claim.—Constructing the movable jaw in two pieces and hinging them in the centre in the manner and for the purpose substantially as set forth.

No. 16,502.—ABNER VAN HORN, of New York, N. Y.—*Improvement in Core-Boxes.*—Patent dated January 27, 1857.—Figure 1 represents the core-box A, which is made in two parts, with the zigzag projections B B inserted, but not shown in this figure, which are attached to the lifts C C.

Figure 2 represents the interior and shape of the core-box, and also the projection B.

Figure 3 represents the projection B withdrawn.

Claim.—The use of the compartments B B, constructed and operating as described, when arranged in connexion with the lifts C C and flask A, as set forth.

No. 17,732.—WILLIAM GAGE & RICHARD B. FELTHOUSEN, of Buffalo, N. Y.—*Improvement in Dry Sand Cores.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The application and use of glue or blood (either separately or in combination) mixed with sand, for the purpose of making dry sand cores for founding purposes, substantially as described.

No. 18,964.—WILLIAM GAGE & RICHARD B. FELTHOUSEN, of Buffalo, N. Y.—*Improvement in Dry Sand Cores.*—Patent dated December 29, 1857.—In describing their improvement the inventors say: We take any convenient quantity of flour and put it into a vessel, and mix therewith a sufficient quantity of water to make it flow freely as a liquid, taking care that the flour and water shall be so well mixed, that there shall be no lumps or dry flour remaining there. We then place the vessel containing the mixture over a fire, and boil the same until it is converted into a starchy, glutinous, or viscous substance, and sufficiently dense and strong to bear up an egg.

The inventors say: We are aware that flour in a dry or unprepared state has long been used in the composition of dry sand cores; we therefore disclaim its application or use in this well known way.

We claim the application and use of the viscous substance, or paste

which we obtain from flour, in the manner described, in admixture with sand, for the purpose of forming dry sand cores, in the manner set forth.

No. 18,337.—NORMAN C. HARRIS and ALONZO BUTLER, of Poultney, Vermont.—*Improvement in Curry Combs*.—Patent dated October 6, 1857.—The inventors, in describing their improvement, say: We cut out a piece of sheet metal A (fig. 1) of the proper size, and stamp it so as to form a hollow *a* for the reception of a handle to be applied to the card. Corrugations *b b*, of any design, may also be formed for adding firmness to and ornamenting the metal. The edges *c c* are likewise bent over in the manner shown.

When thus prepared, it is placed on the back of the sheet, or plate B, in which the teeth are inserted. Its edges *c c* are then turned closely over the edges of the face, as shown in the drawings. The handle C is then inserted in the socket formed by the union of the hollow *a* and the face B of the card, and is secured therein by the nails or tacks *d d*, and the card becomes complete.

The inventors *claim* the employment of a metallic plate A, to embrace the sheet or plate in which the teeth of the card are inserted in the manner described, for the purpose of adding strength and finish, and for securing the handle thereto.

No. 16,440.—E. T. HENRY, of Scranton, Pennsylvania.—*Improved Die for Making Spikes*.—Patent dated January 20, 1857.—The bar *d*, from which the blanks are cut, is properly heated and placed in the groove *a* of the die A; a knife *e*, which is attached to arm *f*, cuts off the part of the bar which is within the groove *a* of the die, and the head is then formed by a heading device.

Claim.—The lip C, formed at the point end of the groove *a*, in the die A, substantially as shown for the purpose specified.

No. 17,453.—JOHN F. SCHARER, of New York, N Y.—*Improvement in Die-Stock*.—Patent dated June 2, 1857.—The die-plate B can be kept stationary by the point of screw E entering one of the recesses *n*; but the die-plate D, being pressed against the screw blank by screw I acting against the sliding-piece C, can turn within said sliding-piece, and can thus adjust itself to its proper position.

The inventor says: I am aware that circular plates, having dies or recesses of graduated different sizes cut on the peripheries, have been used before, and I do not claim the same.

But I *claim* the arrangement of the die-plate B, when held steadfast in connexion with the die-plate D, having a slight adjusting motion, constructed and operated as specified.

No. 17,707.—JAMES TEACHOUT, of Waterford, New York.—*Improved Die-Stock*.—Patent dated June 30, 1857.—The dies C are inserted within the recesses Z of the die-holder B, and said die-holder, together with the dies, is inserted within the chub of the stock A, as represented in fig. 1; the top plate E and scroll plate D are then

secured on the stock A by means of screws *a*, and the implement is ready for use.

Claim.—Constructing the die-holder B of the screw-cutting die-stock in the particular manner described, so as to give firm support to the inner portion of the top of the dies as well as to their bottoms and sides, and thereby relieve the scroll and guard-plates from all the upward strain or pressure otherwise exerted upon these plates by the inner portion of the dies in cutting screws.

No. 16,372.—ROBERT BRAYTON, of Buffalo, New York.—*Improvement in Dies.*—Patent dated January 13, 1857.—In making hot-pressed nuts and washers by means of these dies, the heated bar is placed upon the die C, and the blank is cut off from the bar by the die B, and compressed into shape in the chamber B¹, at the same time the blank is punched by the punch E, the burr from the nut passing off through hole C¹.

Claim.—The use of chilled cast-iron die or dies, constructed and operating substantially as set forth, for the purposes specified.

No. 17,475.—LEROY S. WHITE, of Hartford, Connecticut, assignor to S. S. ROGERS, E. W. SPERRY, JAMES H. ASHMEAD, and EDMUND HURLBUT, of the same place.—*Improvement in Dies for Punching Fork Tines.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Supporting the small bars or slender part of the tempered die *b* by suitable supports or dies of metal *a*, constructed and used substantially in the manner described.

No. 17,204.—JEREMIAH M. CROSBY, of Norwalk, Ohio.—*Improved Door-Bolt.*—Patent dated May 5, 1857.—When the bolt B is thrown outward into the jamb of the casing by the action of the shaft and eccentric C, the end of rod R, where it is connected with the cam, falls below the centre of the spindle, and its further motion in that direction is arrested by the case L, and thus the bolt is locked.

Claim.—The arrangement of the belt B, rod R, and the cam or eccentric C, combined substantially as described, for the purpose specified.

No. 17,464.—AMOS WESTCOTT, of Syracuse, N. Y.—*Improvement in Door-Bolt.*—Patent dated June 2, 1857.—The knob-shaft C is provided with a wrist-pin F, which passes through slot G of the bolt H, thereby supporting the rear end of the bolt; and the teeth of the pinion E on shaft C act on the pins I of the bolt, thereby operating said bolt when the knob is turned.

The inventor says: I do not claim any particular method of moving door-bolts. But I *claim* the supporting and guiding of the rear or inner end of the bolt H, by connecting it with the knob-shaft C, substantially in the manner and for the purpose set forth.

No. 17,474.—SAMUEL R. WILMOT, of Watertown, Conn., assignor to SAMUEL B. GUERNSEY, of same place.—*Improvement in Door-Bolts.*—Patent dated June 2, 1857.—The sides of the bars C, which are in-

tended to hold the bolt O down to its bed plate, are first separated from the plate A, and by producing the corrugations *d*, said corrugations will serve as guide-bars for the bolt O, while the bars B are raised and hold the bolt to the plate A.

Claim.—The method described of forming a raised bar from a flat plate, without straining the material injuriously, by corrugating the plate at the ends of the bar, and slitting the sides of the bar from the plates, substantially as set forth.

No. 17,843.—CHARLES G. PAGE, of Washington, D. C.—*Improvement in Cylindrical Door-Bolts*.—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I claim the oblique slot in the guard, in combination with the lever or handle of the bolt working in said slot, as set forth.

The zigzag return slots S in the guard, as shown in fig. 2, by which the bolt is carried through its range by the two movements of raising and depressing the handle, as set forth.

No. 17,808.—CHARLES G. PAGE, of Washington, D. C.—*Improvement in Locking Cylindrical Door-Bolts*.—Patent dated July 14, 1857.—By having the stem of the handle *b* sliding in the oblique slots *m*, the bolt is convertible into a right and left handed bolt, and is secured against being revolved by jarring, and also against being slipped end-wise by accident, while the bolt can be locked or unlocked by simply turning the handle *b*.

Claim.—Locking the bolt by means of the loose handles, substantially as set forth.

No. 18,537.—SAMUEL S. DAY, of New York, N. Y.—*Improved Rose for Door-Knobs*.—Patent dated November 3, 1857.—In the engravings, A is the stile of the door; B are the knobs; C are the roses; *d* is the disk flange which fits against the door; *e* is a flange which projects into the door, having a screw-thread cut on the outside, by which it is firmly held in the wood, the inner surface forming a bearing for the shank of the knob, as seen in the engravings, by which arrangement this flange is made to serve two purposes, viz: securing the rose to the wood, and supporting the shank of the knob. This flange has within it, and forming a part of it, a slotted flange *f*, which answers the two-fold purpose of an end-bearing for the shank of the knob and a convenient and indispensable seat or hold for the screwdriver to act upon in driving the rose into the hole previously bored for its reception.

The inventor says: I make no claim to securing the shank of the rose in the door by means of a screw made upon the outside of it, as this has already been done.

I claim combining the slotted flange *f*, the screw-threaded flange *e*, and the disk flange *d*, in the construction of a rose for door knobs, as and for the purpose set forth.

No. 17,887.—ORRIN NEWTON, of Pittsburg, Pa.—*Improved Spindle for Door-Knobs*.—Patent dated July 28, 1857.—The spindle B being passed through the door with the notches *i* projecting on the opposite

side of the door, the shank C is placed upon the spindle, and the key D, fig. 5, is inserted in two of the notches *i* and the notches *d e* of the shank C, thereby securing the spindle to the shank, the plate E preventing the key from slipping out.

The inventor says: I do not claim as new the use of notches in the spindle, nor the use of a key to connect the spindle and shank.

But I *claim* the arrangement of the notches on the spindle of the door-knob in alternate positions on opposite corners or angles of the squared spindle, in combination with the key, constructed as described, and the deep and shallow groove in the shank, together with the depression in the circle plate to keep the key in place, for the purpose of adjusting the length of the spindle of door-knobs to different thickness of doors, by gradations sufficiently minute to answer all practical purposes, and for other purposes set forth, substantially as described.

No. 16,512.—A. F. CHATMAN, assignor to Aimsself and JACOB PECARE, of New York, N. Y.—*Improved Door-Spring*.—Patent dated January 27, 1857.—The wire B B is passed through the hinges of the door, and forms the hinge of a pair of hinges; and the bent ends of the wire O O O O are fastened to the door by staples or otherwise.

The inventor says: I do not claim helical springs; nor a helix wound around a wire; nor a helix alone.

But I *claim* a wire B B¹ doubled lengthwise on itself two or more times in the manner described, so that it will form a spring, by opposite forces, when enclosed in a cylinder or tube, and not otherwise, to be used as a hinge, in combination with the spring, or without the hinge.

No. 17,070.—GILBERT L. BAILEY, of Portland, Me.—*Improved Door-Spring*.—Patent dated April 21, 1857.—When the door T is opened, the roller H follows guide X and passes in towards the hinge of the door, thereby compressing the volute spring D; and the tendency of said spring to resume its conical form causes it to press against lever L, forcing roller H back to its original position at the outer end of guide X, thereby closing door T.

The inventor says: I do not claim any of the described parts separately.

Neither do I claim in a door-spring making the pressure greatest when the door is closed.

But I *claim* the use of the volute, coniform spring D, in connexion with post A, lever L, and guide X; the whole arranged and operating substantially in the manner and for the purpose set forth.

No. 18,164.—EDWARD P. TORREY and WILLIAM B. TILTON, of New York, N. Y.—*Improved Door-Spring*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim any of the parts, separately considered.

Neither do we claim the combination of a stop-pin and adjusting

device applied for regulating the upright torsional rod spring, irrespective of the arrangements of said parts.

But we *claim* as our invention, and as a necessary auxiliary to render such adjusting device practicable and useful, the arrangement of the adjusting cog-wheel D between the two notched ears C of the bracket A and the pivoted stop plate on the face of the bracket, and in such relation to said cog-wheel and the notches *a* in the ears, that the whole, operating together as specified, will form a firm and substantial adjusting device for the upright torsional rod spring F, as set forth.

No. 18,987.—CHARLES A. PECK, of New York, N. Y.—*Improved Door-Spring*.—Patent dated December 29, 1857.—This invention relates to a door-spring in which an arm or lever operated by a box spring is made to act upon the door, and consists in the employment of a variable bearing roller *j*, which may be adjusted nearer to or further from the spring A. The plates *f f* are so attached to the door B as to be directly below the rod *e*, which rod bears against the roller.

Claim.—The employment of a variable roller *j*, as described.

No. 16,324.—JOHN BROUGHTON, Chicago, Ill.—*Improvement in Door-Springs*.—Patent dated January 6, 1857.—In the engravings, figures 1 and 2 represent this device as applied to a door when the latter is open, A representing the door frame, and B the door; figure 2 represents the device when the door is shut. The invention will be understood by reference to these figures and the claim.

Claim.—Combining a flat or other suitable spring H with the leaves D D of the auxiliary hinge or other actuating devices, by means of a compound or double action toggle I J, applied and operating substantially as described and for the purposes set forth.

No. 16,759.—LEOPOLD THOMAS, of Alleghany City, Pa.—*Improvement in Door-Springs*.—Patent dated March 3, 1857.—The nature of this improvement will be understood from the claim and engravings.

The inventor says: I do not claim the use of the spiral spring *c*, nor the roller *b*.

But I *claim* the use of compound lever *g h*, in combination with the connecting arms K K and spiral springs *c*, or their equivalent, in the manner and for the purposes set forth.

No. 17,490.—JEREMIAH M. CROSBY, of Norwalk, O.—*Improved Catch for Doors*.—Patent dated June 9, 1857.—In shutting a door to which this catch is applied, the bolt B is pressed back and operates only upon the soft spring F, without acting on cam A, spring E, or any other part of the lock, whereby no part of the lock is strained, and the shutting of the door can be performed easily and without noise.

Claim.—The employment of the additional soft spring F, and connecting slide S, or its equivalent, between and in combination with the bolt B and main spring E, arranged and operated substantially in the manner and for the purpose specified.

No. 18,911.—CHARLES D. KELLOGG and WILLIAM L. COAN, of Boston, Mass.—*Improvement in Glass Knobs for Doors*.—Patent dated December 22, 1857.—This improved knob is made of transparent glass, and with a cavity or recess *e* for the reception of the shank *E*, the same being made to extend axially into the knob. In and against, and so far as to cover the bottom of said cavity, a disk or plate *f* of silver foil is placed, so that the planished surface of the same may be in direct contact with the bottom.

Claim.—Arranging on the bottom of the cavity *e* a plate or disk of foil, in combination with arranging an annulus of foil around the mouth of the cavity and against the glass knob, as specified.

No. 17,944.—GEORGE C. TAFT, of Worcester, Mass.—*Improved Self-Feeding Drill*.—Patent dated August 4, 1857.—When the drill arbor *D* is turned, the screw *C*, in consequence of being connected by clamp *H* to crank *G*, will feed the drill *E* to its work just as fast as the drill cuts; for the instant the screw attempts to force the drill forward faster than it cuts, the resistance offered to the turning of the drill will cause the clamp *H* to slip around on the screw *C*. The pressure of the clamp *H* on the screw *C* may be regulated by adjusting screw *g*.

The inventor says: I do not claim placing the drill arbor within the hollow screw, for that arrangement is commonly used for feeding the drill to its work, the screw being turned by hand.

Neither do I claim the means employed for adjusting the head *I*.

But I *claim* connecting the screw *C* with the crank *G*, by means of the clamp *H*, substantially as and for the purpose set forth.

No. 16,900.—GEORGE C. TAFT, assignor to HENRY W. MASON, both of Worcester, Mass.—*Improvement in Feeding Drill-Shaft*.—Patent dated March 24, 1857.—The purpose of the secondary lever and spring is to keep the drill *D* close up to the work, and prevent over straining or breakage of the screw threads or the vibrator lever. While the vibrator *K* has a positive motion invariable in its extent, the secondary lever and its spring, during the movements of said vibrator lever, will cause the pawl to turn the ratchet *M* far enough to advance the drill in proportion to its ability to bore the work, the spring permitting the vibrator to continue its advance or forward movement, without danger of being strained or broken by the pressure of the cam *I*.

Claim.—Combining the pawl with the vibrator lever by a secondary lever and spring applied to them, substantially in the manner and for the purpose as specified.

No. 16,552.—ROBERT G. PINE, of Newark, N. J.—*Improved Machine for Grinding File-Blanks*.—Patent dated February 3, 1857.

Claim.—1st. The reciprocating frame *E* attached to the frame *A*¹, as shown, and having springs *f* connected with it, when said frame is used in connexion with the grindstone *F* and patterns *j j*, for the purpose specified.

2d. I *claim* attaching the frame *A*¹ to the levers *m*, bars *I*, and

shaft K, having roller L upon it, said parts being arranged as shown or in an equivalent way, for the purpose set forth.

No. 16,681.—ISAAC H. COLLIER, of Poughkeepsie, New York.—*Improved File-cutting Machine*.—Patent dated February 24, 1857.—The first part of the improvement will be fully understood by reference to the patent of Conklin, &c., upon which this is an improvement.

Y C² F² is the device for holding the file T². Y consists of a right and left screw, with two nuts, which nuts are pressed by the screw against the levers F² at one end, which closes the other ends against the file, thus preventing it slipping endwise; and the tang is held by C², a round piece grooved at top to receive the tang, and a spring at the bottom, which keeps the file up until the roller U² presses it down, and keeps it from shifting sidewise; s is the chisel.

The inventor says: I do not claim the manner of automatically graduating the blow by the action of the cams F and springs S; but I claim, as an improvement on the mode patented by Conklin, Sidman, and Whritner, the jointed frames P Q R D for transmitting the graduated effect of the springs S to the hammer A, so that the rods holding said springs will not vibrate from the movement of the hammer.

I also claim the combination of the lever jaws with the spring tang-holder, arranged and operating substantially as and for the purposes set forth.

No. 17,760.—WILLIAM VAN ANDEN, of Poughkeepsie, New York.—*Improved File-cutting Machine*.—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of a bed E, on which the file blank is cut, having a forward positive feed motion, and an independent forward motion against the edge of the chisel, in consequence of the percussion of the hammer, and the difference of the resistance of the metal at the back edge of the chisel x, wedging it forward at the time of cutting the teeth of the file, to cause their upsetting, substantially in principle of operation as described.

Also, the combination and arrangement of the bed on which the file-blank is cut, operating in the manner substantially as set forth, with the triangular feed-gate I and side rails of the machine frame, or substantially their equivalents, for the purposes set forth.

Also, the combination and arrangement of the ratchet-wheel Q, spring S, and detent pins S², or their equivalents, in combination with the pawls P for operating the same, for the purposes substantially as set forth.

Also, the use of the compound self-adjusting chisel-holder stock W, in combination with the chisel, whereby it is held rigidly in its place under the blow of the hammer, in manner and for the purposes substantially as set forth.

Also, the use of the triangular gate, as a feed motion to my compound bed, in combination with the apparatus for operating the same, substantially as set forth.

No. 17,928.—WILLIAM HALLIWELL and LEVI OSBORN, of Poughkeepsie, N. Y.—*Improved File-Cutting Machine*.—Patent dated August 4, 1857.—When the carriages B C advance, either wing of the switch *o o* is acted upon by one of two pins, which are fixed in the carriage C, and project through a slide in B, and move the point of the switch to the opposite side. The switch *o o*, being placed on the surface of bed A, thus causes the carriage C to slide to either side of carriage B, and thus to bring a fresh file under the chisel.

We *claim* 1st. The combined action of the two carriages B and C, by which the machine is enabled to remove the file that has been cut from under the chisel, and automatically to replace it by one to be cut

2d. We *claim* the swivel-head *x* for holding the chisel, by which, in connexion with the springs *z z*, the chisel adjusts itself on the surface of the file.

3d. We *claim* the levers *b¹*, cams *a¹*, and ratchet bar *h*, as described, for holding the file in place.

No. 18,458.—JAMES Q. KELLY, of Sag Harbor, N. Y.—*Improvements in Harpoons*.—Patent dated October 20, 1857.—When the harpoon is ready for use, it is in the position represented in the engravings 1 and 2. When driven into the body of the whale, the flukes *c c* prevent the instrument from being drawn back, and the motion of the whale in attempting to escape causes the line to be straightened, and the pin *d* to be broken, and then forces the point B forward into the flesh until the eye E reaches the slide G. The barbs *b b*, being thus gradually turned in the flesh, cannot return in the cut made by their insertion, and consequently take a strong hold in the flesh of the whale.

By using the connecting rod *i*, the sliding socket C and the slide G are enabled to slide over any bends in the rod *a*, which are frequently caused by the turning or other violent motions of the whale.

The inventor says: I *claim* the arrangement of the eye or point of attachment of the line D to the harpoon, and the eye in the slide G, through which the line passes at different angles on the harpoon when prepared for throwing, substantially as described, whereby a twisting movement is given to the point of the harpoon in the act of being thrust further into the whale, for the purpose set forth.

I also claim the connecting rod *i* and guide G, in connexion with the sliding socket C, whereby the advantages of a long socket or bearing are attained, without the disadvantage of a continuous tube, in case of bending the rod or shaft which slides therein, substantially as specified.

No. 18,643.—W. G. HYNDMAN, of Cincinnati, Ohio.—*Improvement in Portable Forge*.—Patent dated November 17, 1857.—*a a* represents the body of the forge made in a cylindrical shape, and furnished with a cylindrical bellows B, as usual, which bellows are operated in the ordinary manner at the side of the forge, with a lever which takes hold of the rod *c* attached to the lever part of the bellows. J is the air pipe extending from the bellows to the tuyere iron *h*; *d d* is the hearth of the forge; *g g* is a plate of circular form with a rim

projecting up around its edge, and furnished with lugs for attaching it to the bottom of the hearth-plate, by which plate *g g* are attached to the hearth-plate, the recess *R R* is formed, which recess is filled with any non-conducting substance, to serve as a hearth to prevent the bellows from being heated.

Claim.—The plate *g g* when arranged with the bottom of the hearth-plate *d d*, by which arrangement of plates the recess *R R* is formed, and to be filled with fire-brick or any other good non-conducting material, to serve as a hearth to the forge in place of laying the brick on the top of the hearth-plate *d d*, for reasons mentioned and purposes specified in the specification, and represented in the drawings.

No. 16,531.—JOHN W. CRANNEL, of Olivet, Mich.—*Improvement in Smith's Forge.*—Patent dated February 3, 1857.

Claim.—The use of two hollow sectional nozzle-pieces *H H*, moving at right angles in a two-way groove formed by the chamfered ribs *G G G G*, in combination with the two-wayed slotted opening *K* in the hearth-plate, fig. 2, formed and bounded by the stationary rims *J J*, and the chamfered corner block *L*, whereby the moving nozzles can slide past each other and form a continuous joint in any position.

No. 16,537.—GEORGE P. FOSTER, of Bristol, R. I.—*Improvement in Forging Gun-lock Springs.*—Patent dated February 3, 1857.—The power is applied to the shaft of the upper roll, and, as it revolves, the teeth *D* engage with wheel *C*. A blank is now inserted between the rolls; and when rolled to its full length the teeth disengage, the lower roll is suddenly drawn back by its spring *F*, and the apparatus is ready to receive another blank.

Claim.—Operating the rolls by means of the cogged segment *D*, wheel *C*, and spring *F*, in the manner and for the purpose substantially as herein set forth.

No. 16,444.—WILLIAM KELLY, of Eddyville, Ky.—*Improvement in Blast Furnace.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim blowing blasts of air into a liquid mass of iron, so as to refine it, as that is a well known process. Nor do I now claim, in this process, to refine the iron separate and apart from fuel, as the iron, when being so worked, as above described, in a blast furnace, has a large body of fuel to cover it, in a manner substantially as in a finery fire.

I claim the combination of the hearth of a blast furnace with the auxiliary tuyeres *B B* and *C*, for delivering a blast of air into the fluid iron in said hearth; the whole constructed and operating in the manner and for the purpose specified.

No. 18,167.—SAMUEL WILKES, of Hammondsville, O.—*Improvement in Blast Furnace.*—Patent dated September 8, 1857.—The steam is introduced into this furnace at different points *a*, within the limit of the boshes, for the purpose of securing a thorough oxydation of the

ore, by bringing it in contact with the same at the point at which the chemical action of the furnace is in most active progress.

The inventor says: I do not claim the use of steam in the smelting and making of iron.

I *claim* the introduction and application of steam in blast furnaces at the boshes, whether at one or more points, substantially in the manner as described.

No. 17,659.—CHARLES C. ALGER, of Newburg, N. Y.—*Improved Smelting Furnace*.—Patent dated June 30, 1857.—By this improvement the capacity of a furnace can be materially increased, and a good iron can be produced with a blast not exceeding the pressure usually employed.

Claim.—An improved furnace constructed substantially as described, that is, with its hearth A, or crucible and boshes D, of an elliptical or elongated form, substantially and for the purposes as specified, in combination with two mouths F—one at each end for working and tapping—and two or more tuyeres B B' at each side, so arranged as to introduce the blast in the direction of the breadth, and for the objects explained.

No. 16,560.—HENRY WEISSENBORN, of New York, N. Y.—*Improvement in Blast Furnace*.—Patent dated February 3, 1857.

Claim.—The mechanical arrangement of feeder B, in combination with a surrounding gas chamber D, with an open bottom placed above the furnace throat; whereby the gas is prevented from escaping from the throat of the feeder B, without being covered, and then forced into the gas chamber by the dense body of coal and ore always contained in the feeder, and therefore delivers a regular supply of gas, which can be carried descending to any heating furnaces placed on the bottom ground of the blast furnace with the same advantages as if applied on the top of it, for the purpose and in the manner as specified.

No. 18,051.—PHILIP W. MACKENZIE, of Jersey City, N. J.—*Improvement in Cupola Furnaces*.—Patent dated August 25, 1857.—The blast enters the chamber *f* and passes in the direction of the arrows into the furnace, entering the fuel at $a^1 a^1$ after passing between the columns *d*.

The inventor says: I do not claim the boshing or outside air chamber.

But I *claim* forming a continuous sheet of air as indicated at $a^1 a^1$, where it is brought in contact with the fuel, in combination with the elongated form and increased size below $a^1 a^1$, where the blast enters the fuel.

No. 16,541.—JACOB C. GREEN, of Philadelphia, Pa.—*Improvement in Puddling Furnaces*.—Patent dated February 3, 1857.—On this furnace as many men may be employed as there are openings *a* at each side of the furnace. The arrangement of two hearths G G—one at each end of the furnace—serves to economize fuel and to create a more uniform heat throughout the furnace.

The inventor says: I do not confine myself to any particular length

of furnace, or to the number of openings *a a a*, as four or even five on each side might be employed.

But I *claim* the constructing of puddling furnaces with any convenient number of openings or working-holes on each side, and a fire-place at each end, the bed of the furnace being common to both fires, and the whole being arranged and constructed substantially in the manner set forth and for the purpose specified.

No. 16,999.—EDWARD L. SEYMOUR, of New York, N. Y.—*Improved Gold Separator*.—Patent dated April 7, 1857.—The ore is put into the hopper *h h'*, and by rapidly shifting the lever *l* of the feeding frame *a* from 3 to 4, all that ore which is contained within the compartments 1 3 and 5 of the feeding frame will be scraped down upon the sieves fitted into the openings or divisions 2 4 6 of the sieve-frame. By now operating the piston of the pump *A*, water or air is made vertically to project that ore which rests on the aforesaid sieves, and fills out the three corresponding compartments of both the metal frame *c* and scraping frame *d*, so that after a few strokes of the piston, the particles of that ore may arrange themselves according to their specific gravity; after which the lever *ll* of the scraping frame *d* has also to be shifted from 3 to 4 for the purpose of scraping the refuse matter contained within its partitions 2 4 and 6 into refuse passages 1 3 and 5.

Claim.—The use of the sections or frames, as described, when perforated or constructed so as to open or shut the communication between the upright tubes or compartments for the passage of materials containing gold or other substances, of air or of water, as may be required, the whole operating in connexion with the hopper as described.

No. 17,758.—T. V. TAVNAY, of San Francisco, Cal.—*Improved Gold Washer and Amalgamator*.—Patent dated July 7, 1857.—This gold washer is intended to be attached to the lower end of a sluice in which the coarser particles of gold have been collected; it only receives the finest particles of gold and sand which pass over the amalgamated plates *C* 1 2 3 4 6, *F* 7 8, whereby the gold particles adhere to the mercury of said plates; and when a sufficient quantity of them has been amalgamated on these plates, they pass as a coarse piece of amalgam into one of the riffles *X*; the metal plates being supplied constantly with mercury by introducing the same through screen *K*.

Claim.—In gold washers and amalgamators, the metal plates coated with mercury, the riffles, vanes, and reacting surfaces, arranged and located substantially as described and for the purpose set forth.

No. 16,948.—SAMUEL S. LEWIS, of San Juan, Cal.—*Improved Machine for Washing Gold*.—Patent dated March 31, 1857.—The water employed in the operation of this machine flows freely over the surface formed by the flanges *a* of the bars *b*, and carries with it the large boulders that fail to pass through the openings *F*; the subcurrent, being received under the floor formed by the flanges *a*, is first directed towards the side of the sluice *F* by the oblique bars *D*¹, then the current is taken by the next riffle with direct bars *B*¹, then carried by antagonistic bars *C*¹ towards the opposite side of the flume, and so

on in succession. To collect the deposit, all the riffles must be removed from the sluice, and the amalgam may be swept into a suitable receptacle.

Claim.—The employment of riffles or bottoms, constructed in the manner substantially as described, so that an under current of water may be used between the ribs, in connexion with that flowing over the surface of the bars of the riffles, in the manner and for the purpose set forth.

No. 18,509.—DANIEL LOVEJOY and GEORGE F. BUTTERFIELD, of Lowell, Mass.—*Improved Grinding and Polishing Machine.*—Patent dated October 27, 1857.—The object of this invention is to expedite the process of grinding and polishing metal plates and articles having plane surfaces. The claim and engraving show the nature of the improvement.

Claim.—Giving the plate R, or other article to be ground, a vertical reciprocating motion tangentially with the plane of motion of the stone or wheel D, or parallel therewith, and also a vibrating lateral motion, for the purpose set forth.

No. 17,398.—ROBERT F. UNDERHILL, of Indianapolis, Ind.—*Improved Machine for Cutting Grooves and Slots.*—Patent dated May 26, 1857.—In order to cut a groove on the inside of the hub of the wheel, the wheel is placed on the table E, which can be adjusted by means of set screws H J, and the arbor K is forced down within the hub of the wheel by means of hand wheel P and screw N. Rotary motion being imparted to pulley X, it is transmitted to the cutter wheel V by means of the gearings R S T U, and the edges of the teeth of the wheel V cut a groove on the inner periphery of the hub of the wheel, the cutter wheel being pressed against said hub by means of the adjustable wedge g.

The inventor says: I do not claim the tables A or E; neither do I claim the set screws H H, J J, nor the cylindrical ring G¹, nor the ball and socket joint on the top of the said cylindrical ring. Neither do I claim the curved "standard" B, nor the head I; neither do I claim the screw N, nor the hand-wheel P, taken separately; neither do I claim as new the using of revolving circular cutters, for such have long been used.

But I *claim*, 1st. Forming cutting edges on the outer ends of the cogs or cog-wheels; substantially as described for the purpose set forth.

2d. The combination of the cutter V, as constructed, the cogged wheels R S T U, the shaft W, and the slotted "arbor" K, with the adjustable wedge g, and table E, or any equivalent device, arranged substantially as described for the purpose set forth.

No. 16,638.—HENRY BURT and JAMES T. HEDDEN, of Newark City, N. J.—*Improved Machine for Making Hames.*—Patent dated February 17, 1857.—An iron bar of proper length is placed with one end in the angular groove at a, against the stop b, that delivers it into the forming dies l on rollers A A¹; the bar is conveyed by the rollers A A¹ into the next set of rollers by means of guide d d¹, and so on. The

bar is then placed upon its edge in the feed rollers opposite the hame dies and passed through them. From the latter set of dies it will come out as a finished hame with the end loops complete, there being a D counter-sink or punch at the ends of each set of dies as seen at S. E are the draft eyes.

Claim.—The use of the consecutive ring dies 1, 1 1 1, 2, 2 2 2, in connexion with the angular grooves a and a^2 , and stops b and b^2 , on the feed rollers E and E², substantially as described, constructed and operating in the manner specified and shown.

No. 18,408.—RUSSELL B. PERKINS, of Meriden, Conn.—*Improved Machine for Making Hammers*.—Patent dated October 13, 1857.—The nature of this invention will be understood by a reference to the claim and drawings.

Claim.—The inventor says: I *claim* arranging, in the manner described, the principal parts of a machine for forging hammers, that is to say: placing the rock-shafts a and b , upon which formers or dies are disposed in lateral series, at one end of the frame A, and in the relative position specified to the rock-shaft S, which operates the shearing, cutting, and punching apparatus; in combination with the double cross-head B and n^1 , placed at the reverse end of the frame A, and deriving its motion from the crank C.

I also claim the pin u , so constructed and arranged in relation to the sliding-plate t^2 and lever t^2 , that it will lock or unlock the rock-shaft S, to or from the collar t , when required.

I also claim the combined cross-heads B and n^1 , when so constructed and arranged that the cross-head n^1 may work in connexion with the cross-head B, or separately within said B, as set forth.

I also claim the described contrivance for coupling or uncoupling the two cross-heads B and n^1 , without stopping the crank motion, viz: combining the shaft p^1 , of the two engaging and disengaging hooks o , with the latch p , the catch r , and the lever q , the whole being constructed, arranged, and operated substantially in the manner set forth.

No. 16,714.—HENRY BUSHNELL, of New Haven, Conn.—*Improvement in Trip-Hammers*.—Patent dated March 3, 1857.—The object of this arrangement is to lift and drop the hammer without jar, and by very simple means.

Claim.—The use of the male and female V wheels b c , having, as specified, a portion e of the surface of either one of them removed, so as to permit the hammer h to drop freely, when arranged substantially in the manner and for the purpose set forth.

No. 18,087.—LEVI DODGE, of Cohoes, N. Y.—*Improved Machine for Swedging Hatchet Heads*.—Patent dated September 1, 1857.—The heated iron bar is placed within the cheeks B, which are opened to receive it. The former L is then placed over the cheeks and driven down by any mechanical devices. As it advances it not only drives the metal of the bar before it but closes the cheeks upon K, enabling it to complete the hatchet head.

Claim.—The apparatus described, viz: the block cheeks and former,

to be constructed and operated substantially as and for the purposes set forth.

No. 16,831.—KINGSTON GODDARD, of Philadelphia, Pa.—*Improved Hinge*.—Patent dated March 17, 1857.—In the engraving, *a* is the socket; *b*, the torsion bar; *c*, the door; *e e*, the jamb; *h*, the hollow hinge. In adjusting said hinge to any door it is only necessary to see that one hinge has the socket end stationary, whilst the other moves in a rotary manner upon its pivot upon the opening of the door.

The inventor says: I *claim*, first, the socket in the end (or adjusted to the end so as to form part thereof) of the hinge, to be acted upon directly by a torsion bar, as specified.

I am aware that torsion bars are used in various ways to close doors; I therefore do not claim the torsion bar, but only the hinges, as specified.

No. 16,920.—R. HART, of Marietta, O.—*Improved Hinge*.—Patent dated March 31, 1857.—Power being applied to lever *F*, it is turned on its fulcrum *k*, as represented in dotted lines, figure 1. The pawl *p* bearing on the arm *E*, the friction roller of the arm *E* is made to bear against the flat surface between the inclined planes *a b* of the part *A*; and the part *A* and the gate to which it is attached are raised, and the arm *E* takes the position shown in figure 2, the friction roller being under the inclined plane *b*. In the meantime the arm *D*, being released from the weight upon it, falls to the position shown in figure 2. The weight of the gate now being upon the friction roller of the arm *E*, at a point in the inclined plane *b*, the reaction of the friction roller against the part *A* causes the gate to open, and the flat surface between the inclined planes *a b* is brought over the friction roller of the arm *D*. The power being removed from the lever *F*, the spring *n* causes the lever *F* to resume its former position, and in doing so cam *j* of the arm *E*, bearing upon one end of the pawl *p*, causes the other end to be thrown over the projection *t* of the arm *D*, when it is retained by spring *t*.

Claim.—The employment of the arms or levers *D E*, constructed, arranged, and operating substantially in the manner and for the purpose set forth.

Also, in combination with the movable arms or levers *D E*, the lever *F*, constructed and arranged with a shifting pawl, and operating substantially as shown.

No. 17,419.—S. M. BULLARD, of Holliston, Mass.—*Improved Door Hinge*.—Patent dated June 2, 1857.—The upper cup, whose inclined plane is marked *m n l k*, is attached to the flange which is fastened to the door, and the lower cup is fastened to the flange attached to the door frame. As the door is opened, the roller *D* commences ascending the inclined plane *k l m*. When the roller *D* has arrived just beyond the point *j*, the door will remain open or stand at rest; but if left free to itself at any intermediate point, its own weight will immediately cause it to close.

The inventor says: I do not claim the inclined planes, for they have

been long known and used ; but I *claim* the detached anti-friction roller inserted between two inclined planes, in the manner and for the purpose described.

No. 17,354.—Dr. JOSEPH SHERBOURNE SMITH, of New York, N. Y.—*Improved Spring Hinge*.—Patent dated May 19, 1857.—When this hinge is to be used as a spring hinge, the pin X is depressed so as to enter the hole *a* in plate D, to which the spring G is attached. By withdrawing the pin X, the hinge will act like a common hinge. The power of the spring G may be adjusted by turning the head S on shaft A, the square part B of which then turns plate D and spring G.

Claim.—The use of the centre pin, screw pin, and capped springs, constructed, secured, and operated within the tubular knuckle, having a double lapped joint, in the manner and for the purpose specified.

No. 18,593.—JOHN MAXSON, of De Ruyter, N. Y.—*Improved Spring Hinge*.—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says : I *claim* one or more springs acting against an inclined plane, curved or otherwise, with a recess at the end so arranged as to close and hold a door, substantially as described.

I also claim, in combination with the above, a coiled spring, so arranged as to assist the feather spring or springs, substantially in the manner described.

No. 16,678.—JOHN DAVID BROWNE, of Cincinnati, O.—*Improvement in Hinges*.—Patent dated February 24, 1857.—By this construction of a hinge a large horizontal bearing is obtained.

The inventor says : I do not claim the inclined planes on the joints or bearings of a hinge, as they are well known. I *claim* making one part *b* of the bearings of a hinge concentric to the other part *a*, as described.

No. 18,896.—NICHOLAS A. FENNER, of Providence, R. I.—*Improvement in Casting Hinges*.—Patent dated December 22, 1857.—This invention relates to the manufacture of cast hinges, and consists in the employment of a separate pin *b* for each core *a* ; the latter being moulded upon the pins, which are cast into or enclosed in one leaf A of the hinge ; said pins forming the pivots or centres upon which the knuckles *d* of the other leaf B turn.

The inventor says : I do not claim generally the casting of a wire into the centre of the joint of a hinge, as wires extending right through the joint have been inserted in the process of moulding and casting.

Neither do I claim the casting of pivots or tests on certain of the knuckle pieces, to be received into recesses in others of the said pieces.

But I *claim* the employment of a separate pin for each core, when the cores are moulded upon the pins, and the latter enclosed within the hinge of the casting, as described.

No. 16,371.—SAMUEL BOYD, of New York, N. Y.—*Improvement in the Manufacture of Hoes*.—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I disclaim the making of hoes with sheet steel blades, as such articles have long been known.

I also disclaim the use of rolled steel for hoe blades, as the same has been before used.

I *claim* as a new article of manufacture a hoe having a steel blade A and a malleable cast iron eye B, welded together.

No. 16,584.—HENRY HAVELL, of Newark, New Jersey.—*Improvement in the Mode of Attaching the Eyes to the Blades of Hoes*.—Patent dated February 10, 1857.—The triangular projection C of the cast iron eye is inserted into the cap A on blade B, and then the whole is welded together.

The inventor says: I do not claim the individual parts of a hoe, neither do I claim welding the malleable iron eye to the blade.

But I *claim* the cap A, which forms a socket with the blade B to receive the malleable iron eye, and becomes a part of the same, in the manner and for the purpose substantially as described.

No. 17,642.—JOHN P. SCHENKL, of Boston, Massachusetts.—*Improved Breech-loading Fire-Arms*.—Patent dated June 23, 1857.—By turning lever I, pin *m* on disk *k* forces back bar B, the bent portion *g* of which presses back the tumbler E, turning it on its centre pin *d* and thus cocking the gun. As the movement of lever I is continued, the cam *l* strikes against the corner of notch *t* and forces the barrel A forward off from thimble C; and, as the forward weight of the muzzle overbalances that of the breech, the barrel is thrown into the position represented in dotted lines, ready for loading. By reversing the motion of lever I, the end *r* of bar K raises the barrel A to a horizontal position and brings it up close against the breech thimble C. By pulling trigger H, the needle *c* is thrown forward and the piece is fired. When the hammer D is thrown down, in the act of firing, the pin *c*¹, being in the position represented in figure 4, enters the long groove *b*¹; but, when the hammer is let down slowly, the restraint of the hand on the upper end of lever *x* at *d*¹ presses the lever against the resistance of its spring *a*¹ into the position shown at figure 5, and the pin *c*¹ enters groove *e*¹ and rests against the lower end of it, holding the lock securely in half cock position.

Claim.—First. The method described of stopping the hammer at half cock, by the pressure of the thumb, as set forth.

Second. The bar K, constructed as described, and operated by the pin *n* and lever I, for the purpose of cocking the gun and of returning the barrel into line with the thimble C and locking it therewith, substantially as set forth.

No. 17,542.—ROBERT COOK, of South Abington, Mass., assignor to Himself and SAMUEL NORTON, of the same place.—*Machine for Forging Horse-Shoe Nails*.—Patent dated June 9, 1857.—The nail rod, after

being properly heated, is passed through the feeder K, so as to extend between the strikers A B C D, which, on being put in operation, reduce and taper it on four sides. After it has been sufficiently hammered, the attendant lays hold of the catch lever N and turns it on its fulcrum, so as to bring its shorter arm down upon pitman M, and in front of the shoulder *w* thereof, so that, while said pitman is being moved forward, the shoulder may be carried up to the lever N, and, by pressure against the same, cause it to be moved laterally on its fulcrum, so as to move the feeder and introduce the nail rod between the cutters *m n*, the spring catch O serving to hold the feeder in position while the hammered part of the rod is being severed from the rod. As soon as the nail has been cut off, the attendant raises spring catch O, and turns the catch N, so as to enable the counteracting spring R to draw the feeder back to its original position.

Claim.—Arranging each striker in a separate guide lever, and operating such striker by a spring and such guide lever, when the latter is actuated by means substantially as described.

Also, combining with the pitman M, and the lever L carrying the feeder, a catch lever N, shoulder *w*, and spring catch O, whereby the said feeder may be moved and held up to the cutters, or set free therefrom, as circumstances may require.

No. 17,491.—CALVIN CARPENTER, jr., of Providence, R. I.—*Improved Machine for Making Horse-Shoe Nails.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—I do not claim the cutting of the nail plate in such a manner as to make the heads and points of the blanks from opposite edges of the plate alternately, by turning over the plate, as that is done in cutting brads and other cut nails, for which purposes straight cutters are used.

But I *claim*, 1st, The attachment of the lower die *b* to, or construction thereof as a part of a plate I, which has such a sliding movement, horizontally or otherwise, below the lower cutter *a*, at right angles to the movements of the cutters and closing movement of the dies, as described, that the die receives the blank from the cutters while it is in a stationary condition, and then conveys it under the top die, and, in returning, has the finished nail pushed off it by the lower cutter, substantially as specified.

2d. The gauge K applied to the lever G, or its equivalent, which carries the upper die *b*, and operating as described, in combination with a stationary slotted standard T, by which it is moved out of the way as the dies close, and which also serves to adjust it to give a greater or less width to the nail blanks.

No. 17,265.—DAVID CUMMINGS, of Sorrel Horse, Pa.—*Improvement in Horse Shoes.*—Patent dated May 12, 1857.—The plate B is secured to the horse shoe A by means of the bolts *a*, and serves to hold the calks C D E in place, and to prevent them from turning or unscrewing.

The inventor says : I do not claim movable calks screwed into the bottom of a horse shoe.

But I *claim* the false bottom or holding plate B, constructed as described, when used in connexion with the movable calks C D E, as specified.

No. 18,306.—WILLIAM SOMERVILLE, of Buffalo, N. Y.—*Mode of Attaching Elastic Soles to Horse Shoes*.—Patent dated September 29, 1857.—This invention consists in attaching an elastic sole to the shoe of a horse, by which the inner portion of the bottom of the foot is protected. A is the foot of the horse ; B is the shoe placed upon it, made as other shoes are ; C is a piece of India rubber which fills that space under the foot which is partially enclosed by the shoe. The object of this cushion or sole is to protect the frog, and other parts of the bottom of the foot which are not protected by the shoe. This sole may be removed for cleaning or other purposes by first prying up the heel of it in the middle, so as to displace the prongs D, which allows it to be removed with facility.

The inventor says : I *claim* the sole C, provided with prongs or metallic projections D and E, or their equivalents, in combination with recesses or rebates, or their equivalents, in or above the shoe, substantially as set forth.

No. 18,940.—ELBRIDGE WHEELER, of Marlborough, Mass.—*Improved Machine for Bending Horse Shoes*.—Patent dated December 22, 1857.—A is the frame-work of this invention ; B the bed or table ; C is a carriage which slides upon the ways *a a*, in the bed of the machine. In this machine, which is represented as arranged for bending horse shoes D in the form around which the shoe is bent, which is temporarily secured to the carriage C by the lever E, which is pivoted at *b*, and is forced down upon the former by an eccentric *c* upon the end of the hand lever F, the piece of metal to be bent is also secured to the sliding carriage by a lever G, similarly held down by the hand lever H. The carriage is operated by the crank I upon the driving shaft K and the pitman L. M are the bending levers, which are pivoted to the bed at *d* and connected by the strap or bar N at their forward ends. These levers carry the rolls *f*, the peripheries of which are bevelled to correspond to the bevelled edge of the horse shoe. The cams *o* bear upon the rollers *g*, pivoted to the underside of the bending levers ; and thus, as the bending proceeds, the operator is enabled to regulate the opening between the rolls *f* to correspond to the form and size of the article being bent.

Claim.—The described machine for bending horse shoes, consisting essentially of the following elements in combination, or their substantial equivalents : The travelling carriage C, the bending levers M, and the regulating cam *o*, operating in the manner substantially as set forth for the purpose specified.

No. 16,691.—EDWARD MAYNARD, of Williamsburgh, N. Y.—*Improved Calk for Horse Shoes*.—Patent dated February 24, 1857.—The screw 2 draws the conical body down into the conical hole,

wedging the same perfectly tight, and the blow on the calk when in use tends to drive it more tightly into place.

The inventor says: I do not claim a movable screw calk for the shoes of animals.

But I *claim* the conical or tapering body 1 of the calk, fitting a corresponding shaped hole in the shoe, in which it is retained by the screw 2, or its equivalent, substantially as and for the purpose specified.

No. 17,665.—HENRY BURDEN, of Troy, N. Y.—*Improved Machine for Making Horse Shoes*.—Patent dated June 30, 1857.—The rod r in trough A^2 is introduced between the feed-rollers D and D^1 , and is cut to the proper length by means of the stationary cutter g and moveable cutter g^1 , fig. 4. With this feeding apparatus is connected a self-acting device for stopping its action when a portion of the rod remains too short to form a perfect shoe, consisting of parts B^2 , C^2 , catch u , and moveable frame D^2 , which holds the feeding rolls apart, fig. 2. The rod, when it is fed to the machine, passes between the moveable guides I^2 , fig. 1, against the stop O^2 , and is held in place by them, and is bent by means of the bending-tongue E . The iron is then subjected to the operation of the swaging dies J^2 and M^4 , fig. 3, which, in conjunction with the dies B , press the iron to the required form, and the sides of the shoe are then compressed so that the toe may be wider than said sides by means of the holders I^2 , which are actuated by suitable cams operating on guides I^1 ; the shoe is then creased by creasers m , fig. 5, and punched in a similar manner, and is then subjected to the action of a flattener t , pressing it against a plate t^4 , fig. 3; and when this operation is performed, the pin z pushes the shoe off from the projection s^2 and drops it upon an endless chain, to be carried to the store house.

The inventor says: I do not claim the process of passing the shoe between the revolving dies generally, but limit myself to the particular devices by which I have rendered it practical.

First. I *claim* the described feeding apparatus, and in connexion therewith the mode set forth of cutting off the rod; also the self-acting device for stopping the feeders, and the mode of renewing their action at the proper time.

Second. The mode of bending the rod and placing it in its proper position between the swaging dies, as described.

Third. The flange on the upper swaging die, for the uses and purposes specified.

Fourth. The combination of the revolving, creasing, and punching die with the revolving swaging dies, by which both operations are successively and automatically performed.

Fifth. The devices set forth for taking the shoe from the upper and confining it to the lower dies, and finally taking it from the lower dies and conducting it to the flattener.

Sixth. Also the means described for flattening the shoes.

Seventh. The combination and arrangement of machinery by which the several processes described are performed successively by one machine, and without aid from attendants.

I do not mean to limit myself to the precise means for performing the operations set forth, as they evidently admit of several variations; but I claim those devices or their equivalents which shall substantially effect the same purpose.

No. 17,441.—V. N. MITCHELL, of Concord, N. C.—*Implement for Paring Horses' Hoofs*.—Patent dated June 2, 1857.—The horse's foot is raised and placed in the recess *d*, so that the bottom of the hoof, represented in dotted lines, will bear against the plate E. The frame C is then depressed by forcing down the treadle G, and the knife D will cut a slice from the hoof, the thickness of the slice corresponding to the distance between the edge of the knife and the plate E, which can be adjusted by means of screws *b*.

The inventor says: I do not claim the machine described, nor any of the portions thereof, in themselves; nor do I limit myself to the use of the precise mechanism described, as other forms thereof may be more advantageous for the working of my improvement. I *claim* the reciprocating frame C, provided with the knife D and plate E, the frame being attached to the upright B, having a recess *d* in its upper end, the whole being arranged specifically as shown and described for the purpose set forth.

No. 16,690.—JOSEPH G. MARTIN, of Newark, N. J.—*Improvements in the Manufacture of Iron and Steel*.—Patent dated February 24, 1857.—As the metal comes from the furnace A and flows through one or both of the troughs B and D, the air, steam, or gas issues through the perforations *c* in the troughs. From the troughs the metal passes into crucibles C L.

The inventor says: I do not intend to claim, generally, either the purification of fluid or molten iron, by forcing through, among or in contact with it, air, steam, or other oxydizing or purifying gases, or the employment of any chemical agents for the same purpose.

Nor do I wish to limit myself to any particular construction or arrangement of apparatus for the purifying or converting process, or the use of such chemical agents as have been specified.

But I *claim*, in the purification or conversion of fluid or molten iron, subjecting the molten iron to the action of atmospheric air, steam, or other gaseous body or chemical agents, in any form capable of evolving oxygen or other purifying gas, in such manner as to cause the air, steam, or other solid, liquid, or gaseous body, to impinge upon, penetrate through, or search among the metal while it is flowing, or in a state of transit through a trough or conductor, or other place, substantially as and for the purpose specified.

No. 17,389.—ROBERT MUSHET, of Coleford, England.—*Improvement in the Manufacture of Iron and Steel*.—Patent dated May 26, 1857; patented in England September 22, 1856.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The addition of a triple compound or material of, or containing, iron, carbon, and manganese, to cast iron which has been purified and decarbonized by the action of air whilst in a molten or fluid

state, or in any convenient manner, so as to become mixed and combined in the process of manufacture, in order, by the union of these substances, to obtain malleable iron and steel.

No. 16,798.—GEORGE W. HOLLEY, of Niagara, N. Y.—*Improvement in Enamelling Cast Iron*.—Patent dated March 10, 1857.—The nature of this improvement consists in providing a core plate, (or core rod for a tubular surface,) corresponding, as nearly as may be, to the surface of the pattern which is to be moulded; in which mould, when prepared, the iron to be coated with any given composition is to be cast. This core plate is to be covered with sand, properly prepared with sour flour or molasses, on the side on which it is to be coated.

Claim.—The process of covering the skeleton or core plate and core rod, in the manner described, with the compound or composition with which it is proposed to coat or cover the iron, and then pouring the melted iron on or around said compound or composition, and melting or softening the same so that it will adhere to the surface of the iron as it becomes cold.

The same process may be used for coating or covering copper, brass, and other metals.

No. 17,561.—A. K. EATON, of New York, N. Y.—*Improvement in making Cast Iron Malleable*.—Patent dated June 16, 1857.—The castings of white cast iron are packed in iron boxes, as in the well known process for making malleable cast iron, except that oxyd of zinc, or a mixture of oxyd of zinc and oxyd of iron is used instead of the ordinary material. The whole being exposed to a bright red heat in any suitable furnace, the cast iron is rapidly decarbonized at the expense of the oxygen of the oxyd of zinc.

Claim.—The employment of oxyd of zinc in the production of malleable iron castings, in the manner specified, so that the articles, whilst under this treatment, will have continually presented to them a fresh supply of decarbonizing material.

No. 16,419.—JOHN B. WICKERSHAM, of New York, N. Y.—*Improved Method of Fastening the Rails of Iron Fences in the Posts*.—Patent dated January 13, 1857.—The rails which pass through mortises in the single or double corrugated posts *a* are fastened to said posts by means of a wedge *c*, or in the manner represented in the different cross sections in the engraving.

Claim.—As an improvement on letters patent granted to me September 16, 1856, connecting the bars, strips, or rails that pass through mortises in corrugated metallic posts or bars, by the means described, or by any other means substantially the same, to secure said parts at the points of intersection, substantially as specified.

No. 16,679.—CHRISTOPHER C. BRADLEY, jr., of Syracuse, N. Y.—*Improvement in Grinding the Inner Surface of Cast Iron Kettles*.—Patent dated February 24, 1857.—Loose pieces of grindstone *L* are placed inside of the kettle *D*, and they are revolved in contact with the inside of the kettle by means of fans *F*, which are attached to the revolving shaft *B*. By increasing the speed of *B*, the grindstones

will be caused by centrifugal force to rise higher, and thus the stones can be made to grind and polish the whole inside of the kettle from the bottom to the upper edge.

Claim.—The arrangement of the revolving shaft, vertical fans, and the grindstones with respect to the kettle, as described, when the grindstones operate upon successive portions of the kettle by a change of velocity in the shaft, as set forth.

No. 17,628.—WILLIAM KELLY, of Lyon county, Ky.—*Improvement in the Manufacture of Iron.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Blowing the blasts of air, either hot or cold, up and through a mass of liquid iron, the oxygen in the air combining with the carbon in the iron, causing a greatly increased heat and boiling commotion in the fluid mass, and decarbonizing and refining the iron.

No. 18,347.—GEORGE P. MILLER and HUGH DOUGHERTY, of Lancaster, Pa.—*Improvement in Melting and Refining Iron.*—Patent dated October 6, 1857.—The nature of this invention consists in the use and application of anthracite coke for the purpose of melting and refining and softening iron, and the combining therewith due proportions of anthracite coal in the charging of the cupola for hardening the iron, and thus regulating the temper of the castings by the use of more or less coal as the nature of the casting may require.

The inventors say: We do not claim having discovered the coking of anthracite coal, nor the admixture of such coke with other coals or coke.

But we *claim* adjusting the proper proportions of these fuels for use in melting and refining iron, substantially as set forth, by which we are enabled to use more scrap iron and inferior pig iron than is now known to be used, and to temper the metal in the manner described, with economy of fuels and of time.

No. 18,910.—WILLIAM KELLY, of Lyon, Ky.—*Improvement in Refining Iron.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—1st. Conducting the blast down through the liquid iron to near the bottom of the hearth by the tuyere pipe C, substantially as and for the purposes set forth.

2d. Refining and decarbonizing crude iron simultaneously in the hearth of a blast furnace, and in an adjoining chamber having communication therewith, when the blast enters directly into but one of either of the chambers, as and for the purposes set forth.

No. 16,775.—JUNIUS FOSTER, assignor to JOHN HERBOLD, GEORGE KUHN, and JUNIUS FOSTER, of Brooklyn, N. Y.—*Improved Machine for Swaging Iron.*—Patent dated March 3, 1857.—The object of this improvement is to produce perfectly flat and circular fifth wheels of vehicles. The turned-down end of the heated iron is inserted in the

hole 4, and then the lever *d* is turned so as to cause the rollers *h i* to press the iron into the proper shape around the pattern *c j*.

Claim.—The adjustable block *f*, and rollers *h* and *i*, set on and moved by the lever *g*, when combined with the pattern *c* and flanch *I*; the whole constructed and operating substantially as specified.

No. 16,991.—GARRET J. OLENDORF and EDWIN R. TRIPP, of Middlefield, and SAMUEL HARPER, of Cooperstown, N. Y.—*Improved Trimming Jack*.—Patent dated April 7, 1857.—By pushing lever *C f* away from lever *A*, cam *m* on shaft *B* will release the swinging die *D¹*, and spring *F* forces it into the position represented in dotted lines; the bolt or other article to be cut is now inserted, and by forcing together the levers *C* and *A*, cam *m* acts upon swinging die *D¹*, which latter cuts the bolt.

Claim.—The construction of shaft *B*, in connexion with frame *G* and lever *C*, operating the dies as described and set forth for the purposes specified.

No. 17,939.—STUART PERRY, of Newport, N. Y.—*Improved Key*.—Patent dated August 4, 1857.—The key-bits *h* can be made to slide within their respective grooves in the case *A* by turning the handle *C*; as the projections *m* and *f* of the cams *F D* operate within the recesses *g l* of said bits, and as said recesses are made of different lengths, the bits will be operated at different times. By changing the position of the bits, a number of permutations can be formed, each representing a different arrangement of the key-bits and lock-tumblers.

Claim.—A bank or store lock-key, in which the bits have a movement before, during, and after they have arranged the slides or tumblers of the lock which it is to operate upon; so that all trace of the exact point or part of the movement of said key-bits at which such arranging of the sides or tumblers takes place shall be destroyed, and thus prevent any one but the maker of the lock from making a duplicate, substantially as set forth.

No. 18,654.—THOMAS K. WEBSTER, of Lawrence, Mass.—*Improved Key for Door-Locks*.—Patent dated November 27, 1857.—The engravings and claim show the nature of this invention.

Claim.—The mode of making the key—that is, with its shank and bit in two parts, applied together, and combined with and containing lever bits *p p*, a cam *k*, slider *l*, and spring *m*, or the equivalents therefor; such lever bits, while the key is being turned back in the lock, being made to actuate or force outward the latch-levers *D D* applied to the bolt and its case, and combined and operating therewith as specified, the main bolt being constructed substantially as explained.

No. 17,792.—WILLIAM B. JOHNS, U. S. A.—*Improved Shot-Cartridge*.—Patent dated July 14, 1857.—The flange *A* of the base *B* expands at the moment of discharge, and tightens the cartridge in the base of the piece. The copper disk *D* is designed to give stiffness

to the seat of the shot, and the disk of felt F secures the mouth of the cartridge.

Claim.—The combination of the counter-sunk base-piece B, copper disk D, case C, and felt disk F, as set forth.

No. 17,634.—HIRAM PIERCE, of Claremont, N. H.—*Improved Machine for Straightening Knife-Blades.*—Patent dated June 23, 1857.—The blade R to be straightened is placed upon die Q, and the die P is forced down upon the blade by means of a drop weight; the die P can adjust itself to the tapering form of the blade by means of the ball and socket joint g, by which it is secured to shaft O.

The inventor says: I do not claim the device for raising and dropping the weight, and I do not wish to confine myself to the rendering of the upper die only adjustable, as that may be permanent, and the lower die self-accommodating to the tapering form of the blade, or both dies may be made adjustable.

But I *claim* the employment, in conjunction with a drop weight of self-adjusting dies, in the manner and for the purpose set forth.

No. 17,952.—ANTHONY HANKEY and FRANCIS STILES, jr., of Leicester, Mass., assignors to Themselves and FREDERICK S. TAYLOR, of the same place.—*Improved Machine for Grinding Knives.*—Patent dated August 4, 1857.—The knife B being clamped to the plate C, the plate and the head block E are adjusted by means of screws i and k to bring the knife into the required position with respect to the grindstone L. The handle I is now worked up and down, while the carriage G is slid past the stone; thus every portion of the face of the cutter is brought in contact with the stone, and the cutter is reduced to a perfect plane by a single traverse of the carriage G on the ways H. When this is effected, the knife is tilted by tilting the head block on plate C, and the knife is again traversed in contact with the stone to form the bevel S.

Claim.—Giving to the knife or other article to be ground or polished a vibratory motion in a tangent to the plane of motion of the stone or wheel or parallel therewith.

No. 16,955.—CONRAD POPPENHUSEN and C. F. E. SIMON, of College Point, N. Y., assignors to CONRAD POPPENHUSEN, of the same place.—*Improved Table Knives.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventors say: We are aware that German silver knives have been made by fitting the rear end of the German silver blade to a V-shaped groove in the forward end of the German silver balance nut, and then uniting them by solder; and we do not wish to be understood as claiming broadly the union of the blade with the balance nut by either welding or soldering.

But we claim the mode of procedure described, by which we effect the union of the steel blade with the cast balance nut, whether of malleable or ordinary cast iron, by preparing the rear end of the steel blade with cleansed parallel sides, fitting a groove with parallel sides

in the cast balance nut, preparing the surfaces with borax, or other equivalent flux, and then welding the same by heat and pressure, as described and for the purpose set forth.

No. 17,908.—ALFRED E. MORGAN, Poughkeepsie, N. Y., assignor to Himself, DAVID TODD, and B. WADDLE, of same place.—*Improved Gate-Latch*.—Patent dated July 28, 1857.—When the gate E is open, and swung towards its post D, the bar F on the gate will raise the nearest bolt B, and will strike against the other, the bolt which was raised by the bar F falling by its own gravity as soon as the bar F has passed it.

The inventor says: I am aware that in Loudon's Encyclopædia of Agriculture (page 502) there is described a gate-fastener, composed of two separate swinging bolts.

I do not claim broadly to be the first inventor of vertically moving bolts or latches. I particularly disclaim the latch now in use on the southwest gate of Lafayette square, Washington, D. C.

I *claim* the arrangement and combination together, within a suitable case A, of a pair of vertically moving locking bolts or bars *b b* with a horizontal thumb-bar C, as and for the purposes described.

No. 16,908.—V. R. DAVID, of Newark, Ill.—*Improved Lock*.—Patent dated March 31, 1857.—When this lock is in a locked state, or the bolt G thrown forward, the projection *e* on the bar E is behind the projection *g* on the bolt; in order to throw back the bolt G, the projection *e* on the bar E must be thrown up, free from the projection *g* on the bolt G. This is effected by placing the key H in the hole D, the bit *a*¹ of the key passing through the whole in the plate B, the bit fitting in the slots *e e* at either end of the chamber C. The key H is turned a certain distance till the projection *b* on the slide *a* reaches the centre of the prominence *j*, between the two recesses *i i* in the bar E; and the projection *e* on the bar will then be thrown above the projection *g* on the bolt. The bit of the key is then shoved out free from the slots *c c*, and the end of the bit then acts upon the bolt G in the usual manner, so as to throw it back or within the case.

Claim.—The bar E, with projection *e* attached, in combination with the slide *a* fitted within the slotted chamber C; the above parts being arranged and used in connexion with the bolt G, as described, for the purpose set forth.

No. 17,424.—JULIUS M. COOK, of Hinsdale, N. Y.—*Improved Lock*.—Patent dated June 2, 1857.—When the bolt is locked, as represented in fig. 1, the hook *n*, pivoted in the hollow part of said bolt *a*, is in the position represented in fig. 4, where the projection *m* leans against stud *j*; and the bolt cannot be operated when in that position. To unlock the bolt, the operator places the key upon shaft *b*, turning it to the left, stud *p* of wheel *c* turns fly *e* inward, and at the next revolution the wheel *c* is arrested by the stud *p* coming in contact with the end *g*; the wheel *b* is then turned until the notches in the wheels *b* and *c* are brought opposite each other; and by then placing the key on shaft *d*, the hook *n* is turned into the notches of the wheels

b c, while the stud *j* is released, and the bolt can now be freely operated.

Claim.—The set arranged and operating in connexion with the wheels, fly, and shaft, as described.

No. 17,013.—HENRY RITCHIE, of Newark, N. J., assignor to Himself, SAMUEL C. THOMPSON, and GEORGE W. WESTERFIELD, of Newark, aforesaid.—*Improved Car-Lock.*—Patented April 7, 1857.—When the bolt B is shoved into the casing A, the plates *h* of the jaws D will pass into the notches *c c* of the bolt B, and retain it within the case. In order to release the bolt from the jaws, the key G is turned till its bits move the tumblers *n*, so that the slots *p* will be in line with each other; the lower bit then acts upon the plate F and depresses it, the ledge *m* acting against the projecting inclined plates *i* on the jaws D, and expanding or forcing said jaws outward from each other, the bolt B, when the plates *h* are thrown out from the notches *c*, falling from the case by its own gravity.

The inventor says: I do not claim, separately, the elastic or yielding jaws D D, for they have been previously used.

Neither do I claim, separately, the tumblers *n*, for they are well known.

But I *claim* the combination of the sliding plate F, tumblers *n*, and jaws D D, arranged and operating in connexion with the bolt B for releasing the hasp H, as specified.

No. 17,412.—THOMAS ATTERBURY, of Pittsburg, Pa.—*Improved Door-Lock.*—Patent dated June 2, 1857.—When the lock is unlocked, as represented in figure 2, the key, being inserted in the key-hole and turned in the direction of the arrow, raises the tumbler Q¹ and depresses arm Q, turning the same on pivot *b*; this movement disengages hook *m* from projection *t*, releasing projection *p* from *d*¹; and on further turning the key, the lock can be locked without further obstacle, and the bolt can be secured by setting the dead-latch F to the position represented in figure 1; the dead-latch F can be operated by means of thumb-piece *g*.

The inventor says: I *claim*, first, the use of the vibrating arm Q Q, arranged and constructed as described, which, whilst it acts as a tumbler to the bolt B, serves, in combination with the follower D, as a means of disconnecting the spindle from the bolt when the door is locked, and connecting them when unlocked, as specified.

Second. I do not claim the use of a dead-latch operating directly on the locking bolt, to prevent it being locked or unlocked by the key, as that device is well known.

But I claim the use of an arm or lever F, which, when pressing upon the tumbler of the lock, prevents its being raised, thus forming a guard which protects the locking bolt from any action of the key, and prevents the locking or unlocking of the bolt, in the manner substantially as explained.

No. 18,169.—LINUS YALE, of Newport, N. Y.—*Improved Padlock.*—Patent dated September 8, 1857.—When the key C is inserted into

this lock, as represented in figure 2, it places the joints on the stops 1, 2, 3, 4, 5, on a line with the joint *a*, and allows the part B to be drawn out until stop 5¹ strikes the end of notch F; the staple can now be inserted, and the lock can be closed by pushing part B up against eye *a*¹.

Claim.—The use of the tongued and grooved sliding joint, operating in concert with the jointed stops, as described.

No. 17,681.—FRANK G. JOHNSON, of Brooklyn, N. Y.—*Improved Permutation Lock.*—Patent dated June 30, 1857.—In the engraving the lock is represented in the locked position; the bolt E is suspended to pin R, and by its own gravity is forced to the locked position. To unlock the bolt the key is inserted, and the part *m* of said key is made to act upon the pins *n* of the tumblers *l*, and said tumblers are arranged in such a manner that the slots *a* are made to coincide; the bolt can now be raised, as latch G can enter the grooves *a*; upon the bolt falling to the locked position, the springs S, acting on pins *n*¹, disarrange the tumblers so that the bolt cannot be raised.

Claim.—The combination together of the tumblers *l l l l*—using two or more of said tumblers—with the exterior pins *n n n n*, and the pins *n¹ n¹ n¹ n¹* with the springs *s s s s*, the bolt E, and locking latch G, substantially as set forth.

No. 17,747.—MARCUS P. NORTON, of Troy, N. Y.—*Improved Sash-Lock.*—Patent dated July 7, 1857.—This sash-fastener is inserted in the jamb casing in the position represented in the engraving. By pulling the knob rods B the levers O are operated, thereby moving back the sash bolts E; by pulling the upper knob the upper sash can be moved; by pulling the lower knob the lower sash is operated.

The inventor says: I do not claim the arrangement of the window sash lock and fastener at or near the middle of the window frame, and upon the jamb casing, or in any other part of said window frame, for the purpose of controlling the upper sash without interference from the lower sash, or for any other purpose.

Nor do I claim two fastenings upon one plate.

Neither do I claim economy of room, or a cheap action upon both sashes.

But I *claim* making a double window sash lock and fastener with an upper and lower branch A, which converge and unite into one at or near the knobs B B, or upper end.

No. 18,155.—WILLIAM PATTON, of Towanda, Pa.—*Improved Sash-Lock.*—Patent dated September 8, 1857.—The catch C may take into a notch behind a metallic plate or any other suitable fixture on the upper edge of the sash, to prevent it from being raised; and the catch E will swing on its axle as the sash is run up, and yields to the staples as they come in contact with it; but when the sash is let down, its hook will take into the first one of these staples and there hold the sash.

Claim.—In combination with the single axle *e*, the self-locking hook C, and self-acting double hook-fastener E, so arranged as to act

independently of each other, and so that they may be shifted on said axle to form a right or left hand catch, as set forth.

No. 16,749.—J. CHRISTIAN RIETHMÜLLER, of Pittsburg, Pa.—*Improvement in Locks*.—Patent dated March 3, 1857.—The nature of this improvement will be understood from the claims and engravings. D is the bolt.

The inventor says: I am aware that tumbler plates with notches similar to those described have been used before in locks, and I therefore disclaim distinctly the use of the same.

But I *claim* the peculiar arrangement of the tumbler plates $t\ t^1$ in the box F, viz: the tumbler plates projecting and receding alternately sidewise, their guiding grooves $f\ f^1\ f\ f^1$ in the box F being made accordingly deeper and shallower alternately, and also separating the tumbler plates by a small space; this whole arrangement of the plates $t\ t^1$ being for the purpose of allowing each spring $h\ h$ to act on its respective tumbler plate freely, without interfering with or disturbing the free play and action of the plates or springs adjoining.

And I further claim the providing of one of the tumbler plates with the tongue r , and the recesses $s\ s^1$ in the bolt tumbler E, operating together as described, and for the purpose of securing the bolt tumbler E in its position when the lock is in its locked or unlocked state.

And I further claim the combination of the key and bit plate. I am perfectly aware that bit plates and keys of similar construction have been used before separately, and I therefore do not claim any of these parts when used separately.

But I claim the same, when combined in the manner substantially as described.

No. 16,892.—WILLIAM WHITING, of Roxbury, Mass., and HENRY PICKFORD, of Boston, Mass.—*Improvement in Locks*.—Patent dated March 24, 1857.—In lieu of the India rubber H, any other suitable elastic substance may be used to hold the slides B in place, or these slides may be held by pressure applied to the top one by spring L, which is secured to the inside of the top plate, or by a wedge or inclined surface, or by a cam; in place of the pins e , notches may be made in the end of each slide B.

Claim.—Holding the slides in the exact position to which they are raised by the tumblers, by the pressure of an elastic cushion, or its equivalent, in the manner substantially as set forth.

No. 17,139.—LEGER DISS, of Ilion, N. Y.—*Improvement in Locks*.—Patent dated April 28, 1857.—The key can only be inserted and withdrawn while the bolt A is projected, as when locked. When the key is inserted, the part W enters part L of the slot in the key block F, the head 2 of the key acquires its stationary position, the needles o standing immediately under the ends of the needles M in the needle block H; so that when this block is let down, the needles o of the key will successively enter the needle holes of the block H, and sustaining the needles M at different heights, according to the different lengths of the pins o on the key head, will, by means of the variant position

of the stops *e* with respect to the length of the body plates *X*, allow the stops *e* to settle to a level with each other and to a position opposite to the slot *f* in the bolt *A*; this last movement is made secure by the use of a plate spring *N*, one end of which presses on a small projection at the upper end of each stop.

Claim.—The combination of the stop-holder *G*, self-spreading stops *e*, and the spring *N*, with the tumbler moving the stop-holder and needle block; the arrangement and operation being as described.

Second. The needle block *H*, as attached to the stop-holder, with its series of needles or pins, operating on the stops as described.

Third. The key block *F*, constructed as described, and also the needle key, as shown in figures 3 and 4, fitted to its position, and operating as described.

No. 17,245.—ALFRED WILLIAMS and EDWARD P. CUMMINGS, of Philadelphia, Pa.—*Improvement in Locks*.—Patent dated May 5, 1857.—The clock enclosed in the compartment *L*, when wound up, causes disk *N* to revolve the pin *X* on rod *E*, moving in the groove *O* of the pulley *N*, the bolt being then locked, as represented in figure 1. When the pin *X* arrives opposite the outlet *P*, the springs *D* draw back the yokes *C*, which are attached to bolt *B*, and unlock the lock, as represented in figure 2, the levers *E F* and *H* falling into the positions as represented in the engraving.

Claim.—The use of the yoke *c c c*, the levers *E F*, and the stop-lever *H*, the whole constructed, arranged, and operated in connexion with the disk *N*, as set forth.

No. 17,293.—STUART PERRY, of Newport, N. Y.—*Improvement in Locks*.—Patent dated May 12, 1857.—The parts of this lock are represented in the engravings in detached views. Figure 2 represents the bolt of the lock, the projection *P* of which enters the slots *d* of the fence tumblers *I*, when said bolt is set in its proper place, and the lower face of the cam-plate *R* (figure 3) is placed on the top of cylinder *g*, which encloses the key tumblers *Q* and 4 (figure 1 and figure 8). The key represented in figures 9 and 10 is inserted in the hub *K*, the projection *t* passing through the groove *r*, and the key bits act upon the projections 5 of the key tumblers and the intermediate plates *R*. When the lock is unlocked, the several parts are in the positions as represented in figures 1 and 5, the projection *P* of the bolt being then within the slots *d* of the fence tumblers; to lock the lock, the key handle *S*, as represented in dotted lines in figure 5, is turned to the right so as to drive the bolt *J* outward; as soon as the projection *P* is clear of the notches *d*, the arm *H* of the slide *G* comes in contact with the projections *c* of the fence tumblers, they being then in the positions represented in figures 1, 5, and 6. Cam *M*, in its dotted position (fig. 5), now comes in contact with projection *e* of slide *G*, driving said slide to the position, figure 4, and arranging the fence tumblers as represented in figure 4, thereby excluding the bolt. To unlock the lock, the cam *M*, in the dotted position of figure 4, is brought against projection *e*, pushing out slide *G*, which then releases the fence tumblers *I*; and by then turning key *S* (figure 4) to the right, the key tumblers 4 will

come to act against the fence tumblers I, so as to arrange them in the position as represented in figure 6, when, by the further motion of the key, the bolt is withdrawn; the operation of the key tumblers 4 upon the fence tumblers I is performed by means of the different positions of the key bits 6, which cause said key tumblers to operate each of the fence tumblers I at such a moment as to bring the slots *d* in line at a certain moment.

Claim.—Operating the key tumblers or slides of locks by such an arrangement of parts within the lock that every time it is worked said tumblers or slides must, in relation to their furrings or guides, be moved by the key stem, or its equivalents, beyond the limits to which the key bits move them, and sufficiently beyond, and with such differing distances among themselves beyond, that the limits of their full movement shall be entirely different from the limits of their partial movements in the same direction by the key bits, thus producing false clues, and effectually destroying all true clues for picking, in the ways described.

No. 17,714.—LUDWIG BAIRER, of Pittsburg, Pa., assignor to JOSEPH LIPPINCOTT and WILLIAM C. BARR, of the same place.—*Improvement in Locks.*—Patent dated June 30, 1857.—To unlock the bolt B, the follower C is turned by wrench D in the direction as indicated by the arrow in figure 1; the arm *r* will move the box E until it leaves the notch *s*. The arm *g* will not move the bolt until it strikes the side *u* of the opening *p*; by this time the hook *v* has arrived at the top of the tumbler plates *e*; and when their slots *n* are arranged so as to coincide with each other, the hook *v* can enter said slots, and the follower *c* can be moved further, and the bolt B is drawn back by being acted upon by arm *g*. In order to arrange the tumblers *e* so as to admit the hook *v*, the key H is inserted into the lock, and the tumbler box E, together with the tumblers *e*, being moved forward by turning follower C, each of the tumblers *e* will strike its respective bit *i* of the key H, and cause each one of said tumblers to be arrested in such a manner that all the tumblers come precisely in one range opposite the hook *v*.

The inventors say: I *claim*, 1st. The sliding tumbler box E, carrying the tumblers *e e*, which, by the sliding motion of the box, are brought into contact with the bits of the key, when arranged and constructed substantially as and for the purpose described.

2d. The three-armed "follower" C, when arranged, constructed, and operating on, and in combination with, the tumbler box E, bolt B, and tumblers *e e*, with their slots *n n*, substantially as and for the purpose set forth.

I am aware that bit plates of various shapes are used, and a well known device; but the same have been in all cases simple. I do not claim these; but what I do *claim* is, the key H, when constructed so as to form a double bit plate, and operating on the tumblers in the manner substantially as described.

No. 17,740.—HENRY ISHAM, of New Britain, Conn.—*Improvement in Locks.*—Patent dated July 7, 1857.—A detailed description of this invention would take up too much space to be given here. The prin-

cial features thereof will be understood by reference to the claim and engravings.

Claim.—Combining with the mechanism for throwing the bolt, or any equivalent therefor, a mechanism which rotates with the said bolt-throwing mechanism, and which, by such rotation, at the end of the throw of the bolt interposes its periphery to the line of travel of the bolt, or some part of it, and thereby prevents the bolt from being forced back until the bolt-throwing mechanism is brought to the required position for throwing back the bolt, substantially as described.

Also, the combination of the non-cogged sectors and the cogged sectors on the key-bit with the cogs and projections on the tumbler-slides, substantially as described, or any equivalent therefor, whereby the said slides are controlled by the key-bit, as set forth.

And, finally, the mode, substantially as described, of imparting an intermittent motion to the key-bit, and stopping the same while the mechanism which imparts such motion continues to move, by means of the wheel and pinion having their engaging peripheries constructed as described.

No. 17,815.—WILLIAM WHITING, of Roxbury, Mass., and HENRY PICKFORD, of Boston, Mass.—*Improvement in Locks*.—Patent dated July 14, 1857.—As the key E is entered in the lock, the bits *a* press on the pins *c*, and raise the tumblers A against the action of the springs H. By operating the wrench N, the roller *p* will act upon the slides I, pushing them outward, and withdrawing the hooks *d* from the recesses J; by which motion, also, the catch M, which is pivoted at *p*, is thrown forward in the act of locking the lock, and the end *i* enters the notch of the bolt L, and holds the bolt from being withdrawn.

Claim.—The combination of the slides I with the pawl O, so arranged that whenever the slides are allowed to touch the tumblers, the pawl shall engage the teeth of the tumblers, and hold them stationary.

2d. Operating the slides, the bolt, and the pawl O directly from the wrench shaft, in the manner substantially as set forth.

No. 17,804.—L. F. MUNGER, of Le Roy, N. Y.—*Improvement in Locks*.—Patent dated July 14, 1857.—When the slots *t* of the wheels V coincide with the line of the tongue *g*, the tumbler S can be raised by the action of key *k*, thus releasing the bolt B, which now can be acted upon by key K. The position of the wheels V is adjusted by turning wheels W, two of which are playing loosely on shaft K, and various combinations between these two sets of wheels can be produced by the action of the eccentric shaft *r*, and by adjusting the positions of pins *n*.

Claim.—The combination of the wheels V with the arbor K, in the manner substantially as described, said wheels being retained in position, and imparting motion to each other, in the manner substantially as set forth.

No. 18,162.—JOHN P. SHERWOOD, of Fort Edward, N. Y.—*Improvement in Locks*.—Patent dated September 8, 1857.—When the key is

turned in key-hole *z*, it first strikes against one of the legs of the tumbler *B*, and vibrates the tumbler to such a degree as to throw its teeth *b* clear of the teeth *j* on the bolt; and the instant that this is accomplished, the key strikes against one of the projections *m*, from the inner edge of one of the legs *a* of the bolt, and throws back said bolt; at which moment the key ceases to act upon the tumbler, and allows it to spring back into the normal position, when it will keep the said bolt in its latching position, within reach of the legs *i i* in the knob shank follower *h*, until it is again vibrated by the key.

The inventor says: I *claim* the improvement in locks produced by so shaping and arranging the bolt *A* and the tumbler *B* of a lock, that the said tumbler is enabled to retain the bolt within reach of the arms *i i* on the knob shank follower, when it is used as a spring latch bolt, and also retain the said bolt in a position beyond the reach of said arms, when it is thrown outwards by the key into a position to serve as a lock bolt, substantially as set forth.

I do not claim the use of a dead-latch operating directly on the locking bolt, to prevent it from being locked or unlocked by the key, as that device is well known.

But I *claim* the combination of the lever shank *n* with the tubular pivot *d* and the tumbler *B*, in such a manner that it may be made to firmly lock the tumbler in such a position as to protect the bolt from any action of the key, and thereby prevent the locking or unlocking of the bolt, in the manner substantially as set forth.

No. 18,228.—H. W. COVERT, of Rochester, N. Y.—*Improvement in Locks*.—Patent dated September 15, 1857.—By operating thumb-screw *Z*, the cones *V V*¹ are pressed within the disks *D* and *D*¹, which can thus be secured in any desired position, thus affording the means of forming new combinations of the slots on the disks *D* and *D*¹.

Claim.—The combination of the disks *D D*, with the cones, cylinders, or disks *V V*, in the manner and for the purpose substantially as described.

No. 18,243.—JOSEPH L. HALL, of Cincinnati, O.—*Improvement in Locks*.—Patent dated September 22, 1857.—This invention relates to the construction and arrangement of the parts of a lock whereby the tumblers are made to serve collectively as a screen between the key-hole and the more interior parts of the lock; to prevent the accidental rebound of the bolt at the instant of locking; and to resist the stress upon the tumbler springs at the period of throwing the bolt.

The inventor says: I *claim*, first, the construction and arrangement of tumblers *B B*¹ *B*², &c., in the described connexion with the block *L*, back plate *M*, the whole serving as a screen or curtain between the hole and the more interior parts.

Second. The described construction and arrangement of bit *C c*, lever *D*, *d d*¹, and tumblers *B B*¹ *B*², &c., whereby the bolt is held securely to its locked position until the withdrawal of the key.

Third. The described arrangement and combination of the bit *C c*, dog *I*, and arm *H h*, for the purpose of tightening the springs in the manner set forth.

No. 17,611.—ANDREW PATTERSON, of Birmingham, Pa., assignor to J. H. JONES, of Pittsburg, Pa.—*Improved Keeper for Locks and Latches*.—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The employment, in combination with a blunt or round ended latch bolt in a double faced or reversible lock case, of a keeper, the face of which is curved or made concave, in the manner substantially as described and set forth.

No. 17,150.—AMOS HOLBROOK, of Milford, Massachusetts, and HENRY D. FISH, of Hardwick, Massachusetts.—*Improvement in Chronometric Locks*.—Patent dated April 28, 1857.—The operation of this lock is as follows: When the lock is unlocked, as represented in dotted lines, the frame bolt G is first drawn down so as to project the lock bolts to their utmost capacity beyond the edge of the lock plate, thus compressing the unlocking spring F; in this position the clasps H are closed over the end of the jointed bolt G, claspings the latter and bearing against the stud m; the release levers E are then pressed down against the ends of the clasps H, and the graduated disks B turned sufficiently round to carry the notches d past the bent end of the release levers, so that they shall rest upon the periphery of disk D, the locking of the lock then being completed. The clocks are then wound up and the proper numbers on their disks are set opposite the dials F¹ determining a time in hours when the release levers E shall release the clasps H, and the lock can be unlocked. The lock bolts I are now pressed back to such an extent that their bevelled edges a only project beyond the lock case, when the door can be closed, and the bolts I are pressed in the mortises formed in the jamb of the door, and the operation is completed.

The inventors say: We do not claim the employment of two or more clocks to operate chronometric locks.

But we *claim* the confining of the frame bolt G, and the releasing of the same, by means of the jointed portion Gⁱ, the embracing pawls H H, and release levers E E, operated by said clocks, as set forth.

We also claim the partial setting back of the independent locking spring bolts I I, by means of the spring catch Q, until the closing of the door, as set forth.

No. 16,676.—CALVIN ADAMS, of Oak Hill, New York.—*Improved Keeper for Right and Left Hand Door-Locks*.—Patent dated February 24, 1857.—The keeper E has a bevelled face at F, and can be attached to either side of the door frame. The bolt is blunt at its front end D. Figure 3 represents the position of the parts when applied to a left-handed door.

Claim.—The use of a bevelled keeper, such as described, when employed in connexion with a double-faced lock having a blunt bolt, so that the lock may be used on a right or left hand door, without changing any of its parts, as set forth.

No. 18,372.—ZACHARIAH WALSH, of Newark, New Jersey, assignor to CORNELIUS WALSH, of same place.—*Improved Machine for Cutting Metal Caps for Nail-heads*.—Patent dated October 6, 1857.—This in-

vention consists in the peculiar means employed for feeding or presenting the metal plates from which the caps or covers are cut and formed to the dies. The object being to economize, in the greatest possible degree, in the amount of stock used for the purpose, and also to facilitate and expedite the operation of the machine, so that the work may be done very expeditiously.

The inventor says: I do not claim, separately, the dies for cutting and forming the covers or caps for the nail-heads, for there is nothing essentially new in their construction or in their mode of operation.

But I *claim*, first, feeding or presenting the plate N^1 to the dies, substantially as shown, or in any equivalent way, so that said plate will be moved vertically between its longitudinal or lateral movements towards the dies for the purpose specified; and this I claim, whether used with the dies, arranged as shown, or otherwise.

Second. The bed U , slide G^1 , and gripping levers J^1 , operated as shown, and constituting the feeding device, in combination with the dies $b P c d$, arranged and operated substantially as described.

No. 17,813.—JAMES TETLOW, of Salem, Massachusetts.—*Improved Machine for Cutting Metal*.—Patent dated July 14, 1857.—These cutting blades are intended for cutting bevel edges to metal plates.

The inventor says: I would remark that I do not claim the machine or combination of levers or joints and slides for operating the cutter.

But I *claim* forming the cutter C with an obtuse angle, in such a manner as to give to the surface of the plate, while being cut, a broad, flat bearing D to rest upon, while the other cutter F is cutting through the plate, the obtuse angle of the cutter C being the supplement of the acute angle of the plate when cut.

No. 17,364.—ELIAS F. COATES, of Mystic Bridge, Connecticut.—*Improved Machine for Cutting and Bending Sheet Metal*.—Patent dated May 26, 1857.—The operation of this machine is as follows: The carriage F , with all its attachments, being run back in the ways c , as represented in dotted lines in fig. 2, the sheet of tin is placed upon the bed D , being held thereto by studs d . The carriage F is now drawn forward over the bed D , until it comes up to the stops j ; the sheet to be acted upon is then between the respective faces of the bed and the carriage. The lever P is now pressed down, which brings the platform K upwards, and the blades s coming against the corners of the sheet, and forming shears with the blades $k l$ of the carriage F , these corners are clipped off, and the wings $b o$, now being struck respectively by their levers $M N$, are caused to turn over the flanges $a n$, and the sheet is bent up on its opposite edges, as represented in fig. 3.

Claim.—The cutting and bending of sheets of tin or other metal for roofs by one operation, and through a combination of devices, substantially such as described.

No. 16,505.—ELBRIDGE WHEELER, of Feltonville Mass.—*Improvement in Machines for Forging Metal*.—Patent dated January 27, 1857.—The upper roll C runs in stationary boxes, and the lower one D in boxes that are permitted to slide freely up and down in the frame work; X are rollers upon the shaft at the lower roll, immediately beneath which are the eccentrics M, that are secured to the shaft N; this shaft may be turned by means of handle O, so as to force the lower roll up against the upper one.

The guard P is employed to roll a scollop or other peculiar form upon one edge of a piece of iron; it also serves the purpose of keeping the iron straight, and preventing it from bending round as one side is compressed more than the other.

The inventor says: I do not claim the use of rolls revolving in fixed bearings, and having dies therein, for the purpose of forging or forming specific articles.

I claim the described combination and arrangement of the rolls C and D, one of them being capable of motion to and from the other, and entirely within the control of the operator, as set forth.

2d. I do not claim an annular guard or ring secured to one roll, and playing in a groove in the other, as this has been used before.

I claim the stationary guard P adapted to grooves in both the upper and under rolls, and operating in the manner and for the purpose substantially as set forth.

3d. I claim prolonging the boxes in which the rolls run for the purpose of straightening the work, as described.

No. 17,589.—E. A. SNEAD, of Tioga, N. Y.—*Improvement in Bending Sheet Metal Pans*.—Patent dated June 16, 1857.—A metal plate of the required size being placed upon bed *d*, the lever *m* is forced down, causing cam D to press down die F, which, in moving downwards, pushes down bed *d*, and the side pieces *e*, coming in contact with guides *j*, are forced into the position represented in figure 3, striking up the pan, and the superfluous metal at the corners of plate *l* will be compressed and will project out from the body, as represented in figure 4. The ends of the pan are now placed over the blocks N, as represented in the dotted lines; and the treadle *k* being depressed, the levers L are turned on their bearings *s*, and the jaws *t* are forced over the blocks N, and press down snugly the projection *n*, (fig. 4.) against the sides or body of the pan.

Claim.—The two levers L L, operated through the medium of the arms *r r*, which are attached to the sliding-bar I, the lips or jaws *t* of the levers working over the blocks or beds N; the parts being arranged specifically as shown for the purpose set forth.

No. 18,019.—JULIUS PERRY, of Plymouth Hollow, Connecticut.—*Improved Machine for Bending Metal Plates*.—Patent dated August 18, 1857.—The plate, which has been bent to an angular shape, is placed on bed B and drawn through slot *b* between the rollers I F and bed B; and, as the plate is drawn along, the two rollers, owing to their angular position, press the metal towards the angle of the bend, thus bringing the angle to a sharp edge.

Claim.—The two rollers I F and bed B, placed in positions relatively with each other as shown and described, for the purpose specified.

Further: the rollers I F and bed B, in combination with the die or draw plate *a*, arranged as and for the purpose set forth.

No. 18,011.—E. L. GAYLORD, of Terrysville, Connecticut.—*Improved Machine for Bending Metal Plates.*—Patent dated August 18, 1857.—The strip of metal P to be bent is placed on bed B¹, and the plate, by turning shaft *c*, is forced underneath the bending die M, which bends the plate angularly. The plate thus bent is then passed under the roller J and by the side of roller N; and these two rollers upset the bent plate, forming the corner to a sharp angle.

The inventor says: I am aware that rollers have been arranged in various ways for rolling metals. I also am aware that dies of various kinds have been used for drawing and bending metal bars and plates.

I therefore do not claim, separately, any of the parts shown and described.

But I *claim* the combination of the reciprocating bed B, forming or bending die M, and rollers J N, arranged so as to operate conjointly, as shown, for the purpose set forth.

No. 18,582.—F. GOODWIN, of Astoria, New York.—*Improvement in Fruit-Gatherers.*—Patent dated November 10, 1857.—This implement is used as follows: The operator grasps the pole or staff C and elevates it, placing the frame A underneath the part *g* to be picked. The point passing through the rim *b* and the frame A is so moved that the stem by which the fruit is attached to the limb will be within either of the openings *d*. The operator then suddenly jerks the pole either from or towards him, according to which opening the stem is in, and the fruit will be plucked from the limb and drop into the bag D.

Claim.—The frame A, formed of the elliptical and annular rims *a b* and socket B, the socket having an oblique position relatively with the frame, the outer *a* having the bag D attached, and the rim *b* provided with the projections *c c* and openings *d d*.

No. 17,721.—EDWARD BORLASE, of Bristol, Connecticut.—*Improved Metal-Separator.*—Patent dated July 7, 1857.—The sieves D being supplied with the pulverized ore, a stream of water is forced into cone B through pipe F; and a reciprocating motion being given to the plunger H, said plunger forces the water up through the sieves D; agitating the mass of ore; the metal passing down into pipe G, while the waste water and material pass off through pipe F.

Claim.—The use of conical reservoirs A and B, constructed as described, when arranged in connexion with the sieves D, and the whole operated in the manner specified.

No. 16,481.—SAMUEL HALL, of New York, N. Y.—*Improvement in Cutting Sheet Metal.*—Patent dated January 27, 1857.—The nature of this improvement in shears consists in making the scores *b b* and *c c* in the stock A B, which the edges of the sheet metal cut, pass into, within, or below the line or plane of the face of each shear blade

P P¹; and increasing them in depth as they extend from the cutters, so as to afford room to vibrate the sheet of metal being cut edgewise when the shears are open or while they are cutting; and providing the stock B opposite the scores with ribs *d* and *e*, to give it strength, when the scores are increased in depth.

Claim.—Making the scores *c c* and *b b* in the stock of the shears for the edges of the sheet metal cut to pass into, within, or below the line or plane of the face of each shear blade or cutter; and increasing them (the scores) in depth as they extend from the cutters, substantially as described for the purposes set forth.

No. 16,337.—J. J. LAUBACH, Easton, Pa.—*Improvement in Forming Joints for Sheet Metal.*—Patent dated January 6, 1857.—The locked edges of two metal sheets being placed upon bar C, the roller F is moved forward, the edges of it bearing upon the sheets at each side of the lock, thus closing the same, the roller J not pressing upon the lock in consequence of the bar I being allowed to move inwards; when the lock is closed its whole length, the motion of the rack-bar E is reversed; and as the bar moves backward, the roller J bears upon the upper surface of the lock and compresses it.

Claim.—The roller J, attached to the pendent and swinging-bar J, which is connected or jointed to the arm H, substantially as described for the purpose set forth.

No. 16,456.—JOHN WRIGHT, assignor to the "S. STOW MANUFACTURING COMPANY," of Plantsville, Conn.—*Improved Machine for Bending Sheet Metal.*—Patent dated January 20, 1857.—The sheet of metal *b* is placed in the machine, as represented in fig. 1; and by turning the handle C towards the sheet, the parts will assume positions as represented in fig. 2, plate D turning on its axis and bending the sheet over the edge of C¹.

The inventor says: I disclaim every part of the machine described which is seen in other analogous machines; but I *claim* the plate D, when arranged and employed in the manner and for the purposes substantially as set forth.

No. 16,853.—ELMOT SAVAGE, of East Berlin, Conn.—*Improved Machine for Cutting and Bending Sheet Metal.*—Patent dated March 17, 1857.—The nature of this invention is explained by the claim and illustrations.

The inventor says: I do not claim so applying the clamps and cutters to separate frames or a bow and half bow, that the cutters jointly be moved either towards or away from the clamps without any disturbance of the positions of the cutters relatively to one another; but what I do *claim* is, constructing and arranging the frame which carries the clamps with respect to that which carries the cutters, substantially as described—that is, so that while the clamps are being forced together or made to seize a plate of metal, they shall not spread the cutters apart.

I also claim the mode of constructing the compound lever of the bending rollers, and arranging the rollers thereon, the said compound

lever being composed of a bent lever and arm, and the rollers being applied to them, respectively, in manner as above explained.

I also claim combining with the clamps their crank-shaft and the bending rollers, the auxiliary crank-shaft, or equivalent means, by which the bending roller M may be rotated, independently of force applied through the clamps, and so that the middle of the metallic plate shall not be subjected to injurious strains by the bending rollers.

No. 18,130.—COURTLANDT P. S. BETTS, of New York, N. Y.—*Improved Machine for Cutting Figures out of Sheet Metal*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the blade or shear *d* with the stationary blade or bed-shear *b*, made and acting substantially as specified, whereby the said shear or blade *d*, acting against the shear or blade *b*, first perforates and then cuts the sheet of metal or other material; and this I claim, whether the shear or blade *b* be made stationary or adjustable for varying the cutting angle, as specified.

No. 16,804.—DANIEL NEWTON, of Southington, Conn.—*Improved Roller for Bending Sheet Metal*.—Patent dated March 10, 1857.

Claim.—The application to double seaming machines of a roller containing an angular groove, in which the seam runs in the first revolution, substantially as described.

No. 18,918.—THOMAS J. LLOYD, of Pottsville, Pa.—*Improved Implement for Cutting Metal Tubes*.—Patent dated December 22, 1857.—This invention consists in having a metal collar A, provided at one end with a flanch *a*, which fits in a recess in a circular stock B, which is fitted loosely on the collar. The opposite end of the collar has a ring C secured upon it by a screw *b*, which passes through the ring and also through the collar, and passes or bears against the tube to be cut, which is fitted within the collar. The stock B is fitted and works between the flanch and ring, and a cutting tool *d* is fitted in a socket *c* attached to the stock. The tube D is cut by rotating the stock on the collar, the cutter being fed to its work by a screw *e* operated by hand.

Claim.—The collar A having the stock B fitted loosely thereon, and secured in proper position by the flanch *a* and ring C, the stock B having a socket *c* attached, in which a cutter *d* and screw *e* are fitted, and the whole arranged as shown for the purpose specified.

No. 18,811.—SAMUEL HALL, of New York, N. Y.—*Improved Machine for Cutting Metallic Bars*.—Patent dated December 8, 1857.—The nature of this invention consists in affixing a shear blade or blades H to the end of a cylinder C, so as to operate the blades affixed to it to cut bars of iron and other metal, in connexion with stationary shear-blades J and K, arranged in combination with them.

Claim.—The employment of one or more revolving shear-blades, fastened to the end or face of a revolving hollow cylinder, as described,

in combination with a stationary shear blade or blades, for the purpose described.

No. 16,631.—JOHN R. WENDT, assignor to Himself and AUGUSTUS ROGERS, of Boston, Mass.—*Improvement in Manufacturing Metallic Beads*.—Patent dated February 10, 1857.—A blank B¹ having been severed from a long hollow tube, by means of sawing or filing, it is vertically inserted between two spherical dies A B, as represented in fig. 4. By forcing the dies together, the blank will be compressed in the line of its axis, and each of its two ends swaged down into a spherical bead, in which there will be a hole *a* for the reception of a string.

The inventor says: I do not claim making a piece of metal into a tubular form, nor swaging a piece of metal by dies, when these processes are separately considered; but what I do *claim* is my improved manufacture of hollow beads of metal as made by the operations of reducing the metal to a tubular form, and that of compressing it axially in dies as specified.

No. 17,040.—LEVI L. HILL, of Hudson, N. Y.—*Improvement in Coating Metals with Silver*.—Patent dated April 14, 1857.—A given quantity of nitrate of silver is dissolved in water, and mixed with a solution of chloride of sodium. The resulting precipitate chloride of silver is washed with water until there is left no trace of salt or acid, and then a sufficiency of a strong solution of cyanide of potassium is added to exactly dissolve the chloride of silver. A certain quantity of grape sugar and essence of sassafras is then added, and the article is ready for use.

The inventor says: I do not claim the use of cyanide of silver, for this has been used in the electrotype art, nor the use of the grape sugar or Paris white separately considered.

But I *claim* the combination of cyanide of silver, grape sugar, essence of sassafras, clay, and Paris white, or any of their equivalents, respectively, substantially in the manner and for the purpose described.

No. 18,115.—ELBRIDGE WHEELER, of Feltonville, Mass.—*Improved Machine for Forging Metals*.—Patent dated September 1, 1857.—In this machine the forging of the metal is accomplished by two rollers A B; and as the iron is passed between said revolving rollers, a cam U on shaft T operates lever X of the fulcrum W, pitman Z, crank A¹, shaft D, and eccentric C, which latter supports the roller B, and as it revolves permits the bearings of said roller to slide in corresponding grooves in the frame. Thus the iron can be forged into any desired shape by using a suitable pattern cam U.

Claim.—Operating the roll B at stated intervals, by means of the described arrangement of cams and levers, or their equivalents, whereby I am enabled to roll a piece or bar of metal to a given pattern, in the manner substantially as set forth.

No. 17,876.—GEORGE HASLITINE, of Washington, D. C.—*Improved Machine for Punching and Scraping Metals*.—Patent dated July 28, 1857.—The heated metal rod having been inserted within the open die

box O of the dies L, rotary motion is given to shaft H, and the dies L close upon the metal by sliding down within their inclined ways S, at the same time that the blade B severs the blank from the rod, and the metal is thus formed into the required shape by dies L; the punching is then performed by the punches *b f*, which are operated by suitable cams, in such a manner that one punch does its work and retires, while the other completes the perforation.

Claim.—The punch *b*, in connexion with the punch *u*, constructed and operated as described.

2d. The movable dies L L, when used in combination with two punches *b u*, for the purpose and in the manner substantially as set forth.

No. 18,782.—WILLIAM H. WARD, of Auburn, N. Y.—*Improved Machine for Moulding Shells*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—1st. Adjusting the semi-flasks to the pattern, to the moulding bed, and each other, by means of circular V-shaped guides, constructed and arranged as described.

2d. The combination of the V guides, with the ribs *g g'* and the recesses *n o'* in the base of the flask, for adjusting the pouring tube to the gate pattern.

3d. The combination of the adjusting screws *d*, in the base of the pattern, with the adjustable eccentric rod, arranged as described, for adjusting and raising the pattern, so that its centre will coincide with the plane of the moulding plate.

4th. The combination of the core pin and adjustable flange *c* with the core pin holder and adjusting recess, the whole arranged in the manner and for the purpose set forth.

No. 18,617.—JOHN WOOTTON, of Boonton, N. J.—*Improved Horse-Shoe Nail Machine*.—Patent dated November 10, 1857.—The nature of this improvement is explained by the claim and engravings.

Claim.—1st. The employment of the nail-rod itself as a ratchet, constituting part of a ratchet motion by which it is fed longitudinally to the machine, substantially as described, thereby insuring infallibly a proper length of feed, and dispensing with the necessity of gauges to regulate the feed movement.

2d. Giving to the punching apparatus a motion laterally to the nail-rod, in addition to the longitudinal movement of the rod, substantially as described, so as to produce a combined longitudinal and lateral feed motion.

No. 17,523.—ELHANAN W. SCOTT, of Lowell, Mass., and AMMI M. GEORGE, of Nashua, N. H.—*Improved Nail Machine*.—Patent dated June 9, 1857.—Motion being given the driving wheel D, the bevel wheel Y is rotated, imparting to rods G and plate H a reciprocating motion by means of crank-pin B^a; the feed rolls *g* carry the rod, by the intermittent turning motion given them, up to the gauge X, the gripping jaws L then seize the rod, and the cutters N sever the nail blank by being moved together by connecting rods P, and the friction

rolls t^2 press against the faces of the angular edge of plates T, which causes the pointing rolls R to converge gradually and to point the nail, while the heading tool I performs the operation of heading, and as the arms J are moved backward they are forced apart by spring e, and discharge the nail.

Claim.—Forcing the pointing rolls to revolve and advance at the same time to point the nails or spikes, substantially as specified.

No. 18,457.—JAHAZIAH S. KING, of Raynham, Mass.—*Improved Nail Machine.*—Patent dated October 20, 1857.—This improvement in nail or spike making machinery consists in combining a properly shaped lip E with the after end of the bed-piece H in such a position, in relation to the bed-knife A and the moving knife B, that the point end of a nail will rest upon said lip immediately after it has been severed from the nail-plate, and will be so firmly compressed between said lip and the outer end of the moving knife as to bring it to as sharp a point as is ordinarily given to a wrought nail.

The inventor says: I *claim* pointing a cut nail or spike immediately after it has been severed from the nail plate, by compressing its point between the lip E and a portion of the outer end of the moving knife B, substantially as set forth.

No. 17,273.—JOHN C. GOULD, of Boonton, N. J.—*Improved Nail Plate Feeder.*—Patent dated May 12, 1857.—The nail plate is placed within the nose piece u ; and rotary motion being given to shaft A, crank i and pitman E impart a reciprocating motion to rod G, which actuates toothed sector F^1 , which, meshing in pinion d , gives the alternate turning motion essential to the feeding apparatus of these machines to nose u , at the same time that the toothed sector F^1 is turned on its bearings h , when the nose u is moved to or from the shears b which cut the blank from the nail plate. This reciprocating motion of the nose u is produced by eccentric f^1 and rod v^1 , and the feeding of the nail plate itself is done by rod T, the end of which, at each rearward motion of the nose u , comes in contact with the machine, causing arm S to turn on its fulcrum and to push forward the nail plate V, when the shears are in the position for cutting off a new blank.

Claim.—1st. The feed rod V, the forked spring arm S, in combination with the feed rod T, operating as described and for the purpose set forth.

2d. Placing the ratchet cam F^1 on arm Y for allowing it to have a forward and backward motion, also a vibrating motion for the purpose of accommodating itself to the movement of the nose piece, and for revolving the same as described and set forth.

No. 17,778.—WILLIAM H. BATTELLE, of New Castle, Pa.—*Improved Nail Plate Holder.*—Patent dated July 14, 1857.—In spreading the jaws of this nail plate holder the pry G is inserted between them, resting against the guide piece F.

Claim.—A nail plate holder, composed of the socket, socket head,

and guide, and the jaws held thereto by a ring, substantially in the manner and for the purpose set forth.

No. 19,007.—WILLIAM H. VAN GIESEN of Waterbury, Conn., assignor to Himself, S. M. BUCKINGHAM, and E. BROWN, of Waterbury, Conn.—*Improvement in covering the Heads of Nails*.—Patent dated December 29, 1857.—The blanks, as shown in the engravings, figures 1 and 2, are cut from sheet metal by means of proper dies, and are then swaged in cup or dish form, the points *a* being bent down at right angles with the central portion of the blank. The blank thus swaged is applied to the head *b* of the nail B, and the points are swaged inwards, or towards the inner surface or side of the head *b*; and the points are then swaged and compressed firmly against the inner side of the head *b*, the points being closed snugly around the head. By this means the blank or plate A is fitted over the head *b*.

The inventor says: I do not claim the cutting out and bending from the centre outwards of disks of metal for the purpose of making grummetts, as in the patent of John Alexander, June 20, 1854. A piece of metal cut in the form necessary for a grummet could by no possibility be made to cover a nail head.

But I *claim* a nail covered in the manner substantially as described.

No. 17,941.—SAMUEL J. SEELY, of New York, N. Y., assignor to JOHN M. HOOD, of Brooklyn, N. Y.—*Improved Machine for forging Nails*.—Patent dated August 14, 1857.—The rod to be forged being placed upon the feeder *k*, the operator pushes the feeder towards the hammers to bring the end of the rod over the anvils. Thus held, the anvil face *i*, by its rocking motion, is brought against the under face of the rod as represented by full lines in figure 2, and then the other anvil face *j* is brought against the edge of the rod, as represented by dotted lines. In this way the two anvil faces are in succession brought against the rod to be forged, that it may be struck alternately by the two hammers *p* and *q*, at right angles.

The inventor says: I do not wish to be understood as limiting myself to the use of the kind of feeder and cutters above described, as equivalent devices and arrangements may be substituted.

Nor do I wish to be understood as limiting my claim of invention to the described special construction of the anvils and hammers, nor to the described arrangement of the mechanism for imparting the motions, as the same results may be obtained by my invention by the substitution of equivalents.

I *claim* the employment of two anvil faces placed at an angle with each other, and having a rocking motion to bring them alternately in contact with the article to be forged, substantially as described, in combination with the hammers, substantially as and for the purpose described.

No. 18,428.—CORNELIUS WALSH and ZACHARIAH WALSH, of Newark, New Jersey, assignors to CORNELIUS WALSH, of same place.—*Improved Machine for Polishing the Heads of Trunk Nails*.—Patent dated October 13, 1857.—This invention consists in the peculiar means employed

for feeding and presenting the heads of the nails to the polisher, and also in the peculiar arrangement of the polisher and its connexion with the feeding device, whereby the above parts are made to effect the desired purpose in an expeditious manner.

In operating this machine the tube S is filled with nails, the points being placed first in the tube, as shown in the drawing; motion is given to the shaft H, and a continuous rotary movement is given to the cylinder *d* by means of the belts *b*¹ and *e*¹, which pass around their respective pulleys. The cylinder N is rotated intermittently by means of the crank pulley R; rod G, arm or lever P, and pawl *j*, are arranged as shown in the drawing, the pawls *m m*¹ retaining or holding the ratchet O during the upper movement of the pawl *j*, so as to prevent the casual movement of said ratchet.

The inventors say: We *claim* the rotating and vertically reciprocating cylinder *d*, provided with the polishing substance *i*, in combination with the intermittently rotating cylinder N, provided with radial tubes *n* to receive and hold the nails, the above parts being arranged to operate as shown, for the purpose set forth.

We also claim the arrangement of the stop T, relatively to the spout or tube S, cylinder N, and cams G V, so that it shall be caused to rise at proper intervals, and thus feed the nails regularly out of the tube to the cylinder N, substantially as described.

No. 17,502.—SMITH GARDNER, of New York, New York.—*Improved Machine for making Wrought Nails*.—Patent dated June 9, 1857.—The nail rod is placed and secured within the clamp *e* of the feeding apparatus, and motion being imparted to the driving shaft *m*, the hammers *x* are raised alternately by the cams A B, and fall down to the anvil on the nail rod to be pointed. During the hammering of the nail, the feeding tube and nail rod is turned at each blow, so that each of the hammers *x* may strike a new side of the nail rod, and thus point the nail to a square. This turning of the feed tube is effected by means of wheel *p*³ acting upon a sliding rack *p* which is connected by means of braces C with the disk *b* of the feeding tube.

Claim.—1st. The feeding apparatus, constructed substantially in the manner and for the purpose specified.

2d. Projecting the finished nail to the rear of the anvil to be cut off as described.

3d. The eccentric *y* and spring to hold the nail rod when rapidly brought back to its place.

4th. Vibrating the rod under the two hammers, so as to alternately receive a blow on its different sides as set forth, and by means substantially as described.

5th. The general combination and arrangement of the several parts of the machine for feeding, presenting, swaging, and cutting off the finished nail, by which I make a wrought iron nail of any specified pattern.

No. 17,534.—SAMUEL H. WHITAKER, of Cincinnati, Ohio.—*Improved Nut Machine*.—Patent dated June 9, 1857.—The bar of iron, being properly heated, is fed by hand into the machine; and as the

punch *b* is moved forward, it punches a hole into said bar without forcing out the core, the bar being forced by the punch against the solid metal of the housing *a*. On the next advance of the slide *F*, the plunger *L* cuts off a piece of the size of the nut, and forces said pieces upon the tapering punch *J*, which punches the hole from the reversed side of plunger *b*. The piece, by the further continued motion of the plunger, is now brought between the rolls *C*, and between the roller *M* and the inside of the housing *a*, by which the exterior, which has been swelled out by the punching operation, is reduced to the proper shape. The retreat of the plunger *L* is followed closely by the return of hollow sleeve *K* along the mandrel, and the latter forces the complete washer from the mandrel.

The inventor says: I do not claim the employment of two punches entering the nut or washer from opposite sides, as I am aware that such a contrivance is described in the patent of Richard Coles, such punches, however, being parallel sided and arranged in line and operating differently to my taper punch and mandrel.

But I *claim*, first, the employment of a taper punch *p*, a hollow plunger *L*, or its equivalent, and a taper pointed mandrel *J*, combined and arranged to operate substantially as set forth.

Second. The combination of the hollow sleeve *K* and the plunger and cutter *L* with the forming rollers *CCM*, substantially as described, for the purpose of carrying the nut or washer blanks to and from the said roller.

No. 18,259.—SAMUEL H. WHITAKER, of Cincinnati, Ohio.—*Improved Nut Machine*.—Patent dated September 22, 1857.—The nature and object of this invention consists in a provision for making metallic nuts of definite thickness, not varying materially from that of the bar, and so as to save the scrap produced by punching.

The dies *N* and *L* are mounted on, and advance and recede together with stock *F*, which has a longitudinal sliding motion imparted to it by the cam *D*; the die *N* is provided with upper and lower flanges or lugs *n n*, distant from each other the length of the bar; the central aperture of the die *N* is occupied by a punch *b*, which has an independent sliding motion imparted to it by the cam *P*, which acts on the stock *p* of said punch; the die *L* is provided with a cutting edge *l*, which separates the partially formed nut; the counter die *K* is retracted by a brace of cams *G G* working in yokes *H H*, which proceed from the cross-head *I*, attached to the head of the stock of the counter die; a punch *J*, being firmly fixed in the frame, occupies the central aperture of the counter die *K*, the latter sliding to and fro upon the punch.

The inventor says: I *claim* the use of the preparatory punch *b* and die *N*, in the described combination with the shearing and finishing die *L*, punch or mandrel *J*, and counter die *K*, whereby a nut of definite thickness is formed by first partially punching the blank while joined to the bar, and confined on every other side, then separating the blank and completing the punching and shaping, the whole being constructed and operating substantially in the manner set forth.

No. 18,499.—RICHARD H. COLE, of St. Louis, Mo.—*Improved Nut Machines*.—Patent dated October 27, 1857.—The nature of this invention will be understood by an examination of the claim and engravings.

Claim.—The inventor says: I *claim* the preliminary shaping of the end of a heated metallic bar, to make it correspond on all sides, save one, with the cross section of the finishing die box, by which the necessity of cutting off, by the punch, of more than one side of the nut to be formed, is prevented, and from which results a very great saving of metal in manufacturing many-sided nuts, at the same time that a considerable saving of power is produced in operating the machine; but this I only claim when the said preliminary shaping of the exterior portion of a nut is accomplished immediately in front of the mouth of a die box, substantially in the manner set forth.

No. 18,892.—J. C. DAY, of Jersey City, N. J.—*Improved Nut Machine*.—Patent dated December 22, 1857.—The engravings and claims explain the nature of this invention.

The inventor says: I *claim* the arrangement and use of the cutting die *a*, the compressing dies *g h*, the punches *c d*, and the finishing and discharging die *b*, when constructed in the manner and operated in the order set forth.

I also claim the arrangement of the projecting under side or bottom *f* of the die box, in combination with the feeding standard *C*, sheared die top *e*, and dies *a b*, in such a manner that the nut bar is fed into the machine, the nuts cut therefrom, and finally discharged from the machine without the employment of any other means except the ordinary or otherwise necessary motions of the two dies *a b*, substantially as described.

I also claim the arrangement of the bearing *k k*, with sliding wedges *i i*, which are adjusted by screws *j j*, or their equivalents, for the purpose of accurately adjusting the movements of the toggle levers and links, as described.

I also claim the arrangement and combination of the sectors *R S* and cam *L*, in the manner and for the purpose specified.

No. 16,507.—S. H. WHITAKER, of Cincinnati, Ohio.—*Improvement in Nut Machines*.—Patent dated January 27, 1857.—Motion being given the shaft *J*, the bar *Q* is first moved towards the end of the mandrel *I* by the cam *L*, and its end pressed firmly against the end of the bar *S*, which is consequently clamped and somewhat compressed between the ends of the bar *Q* and mandrel *I*. The frame *C* is then moved towards the driving shaft *J* by the rod *N*, and at the same time the shears *E E* and roller *F* are partially rotated by the eccentric *K* and rod *M*. The shears *E E* cut off the blank from the bar, and the inner sides of the shears smooth its sides, while the rollers *F G* smooth the upper and lower edges of the nut. The rod *a*¹ moves with the frame *C* and punches the hole through the centre of the nut, the punch forcing the scraps *b*¹ through the hollow *d*¹ in the bar *Q*.

Claim.—The circular shears *E E* and rollers or dies *F G* for cutting off the blanks and smoothing their edges, the bar *S* being grasped or held by the mandrel *I* and bar *Q* or any proper device.

I also claim the circular shears E E and rollers or dies F G in combination with the fixed mandrel I, punch or rod a^1 , and reciprocating bar Q, the above parts being arranged and operating as shown, for the purpose set forth.

No. 17,197.—RICHARD H. COLE, of St. Louis, Mo.—*Improvement in Nut Machines*.—Patent dated May 5, 1857.—This is an improvement on a machine patented to the inventor on the 3d June, 1856. The present improvement relates to the employment of a spring M mounted on plate G, which carries the angular punch d , for the purpose of quickly bringing back the round punch, both when the cam O allows it to recede after its forward motion for discharging the wad from the angular punch, and also after it punches the hole in the nut in conjunction with the round punch, in order to allow the said round punch to advance and clear the wad from the nut.

Claim.—The application of the spring M to the sliding punch plates, substantially in the manner and for the purposes described.

No. 17,914.—ROBERT BRAYTON, of Buffalo, N. Y.—*Improvement in Nut Machines*.—Patent dated August 4, 1857.—By the action of spring P, in combination with the eccentric J, the arm L is moved from L^1 to L, and also reverses the valve in the steam chest as soon as it is released from the spring catch Q; thereby steam is admitted to the upper end of the cylinder, causing the head block B and the dies to descend from A^1 to A, and back to A^1 , thereby making a double stroke; at the same time the wrist R, which is secured to the head block, as it descends, turns the arm L down to L^1 , when it is caught by spring catch Q. Thus as soon as the arm L is released from the catch Q it turns from L^1 to L, which instantly causes the head block to descend, and the dies to punch and compress the nut into shape; the head block then returns to its former position, and the nut is discharged from the die box.

Claim.—The use of the trigger s , spring catch Q, arm L, pin f , slide rod V, provided with the spring e , notch v , protection g , and inclined plane h , substantially as described, and in relation to and being operated by the foot lever a and spring c , constructed and arranged in the manner and for the purposes specified.

No. 18,156.—EDWARD PAGE and SAMUEL HALL, of New York, N. Y.—*Improved Machine for Forging Nuts*.—Patent dated September 8, 1857.—The machine being set in motion by turning shaft D, the heated end of an iron bar of suitable size is placed between the guides i , when punch I, operated by cam O, comes forward and cuts off a piece to form a nut and forces it on to punch L^2 , which perforates it; it is then compressed by punch I, which forces it against the end of hub a ; the punch I is then withdrawn, and the nut on punch L^2 is alternately hammered by hammers e , the pins d of which extend into the cam grooves b and are compressed by punches L^2 and I. The punch L^2 is then withdrawn by cam K^1 , and the nut drops through hole R, and falls out of the machine.

Claim.—The hammering apparatus, as described, in combination

with the punch I and the punch L', arranged and operating in the manner set forth, for making nuts, substantially as described.

No. 17,734.—ALMON B. GLOVER, of Birmingham, Connecticut.—*Improved Machine for Tapping Nuts*.—Patent dated July 7, 1857.—A rotating reciprocating motion being given to the arbors B¹ and G, the tap C is forced against the blank in the tap box S¹ by means of collar r acting against the face t of bar H, and the thread is cut in the blank. The blanks are fed to the tap box by means of slide T, which is operated back and forth by means of tappet F¹ acting alternately against the arms g¹ g¹.

Claim.—First. Giving the arbor B¹, simultaneously with its reciprocating rotary motion, a longitudinal movement back and forth by means of the collar r placed on the shaft G, and provided with the spiral groove g, and inclined or oblique end S, and the bar H, which is placed loosely on the shaft G, and connected with said collar, as described.

Second. The employment or use of the spring e, placed within the sleeve d, and the spring h¹ placed on the shaft N, and connected with the arms g¹ g¹, for the purpose of allowing the arbor B¹ and arms g g an independent movement, and thereby preventing any injury which might otherwise be produced by any irregularity in the feeding of the blanks within the tap box.

No. 16,495.—DAVID POLLOCK, of Lancaster, Pa.—*Improved Ore Cleaner*.—Patent dated January 27, 1857.—The nature of this invention consists in the construction of an open cylinder, with adjustable bars A to regulate the spaces between; a perforated guard D to relieve the cylinder; a hollow perforated shaft G, for the purpose of supplying and distributing water to any or all parts of the cylinder; an adjustable travelling roller N; and lifters K for crushing and stirring up the ore.

The inventor says: I am aware that machines for washing, cleaning, or crushing ore or other material have been made with parallel hollow cylinders, either perforated or closed, provided with pins, projections, or close ledges.

I am also aware of conical hollow cylinders, close and perforated, provided with projections, pins, or shovels, on the inner side of cylinders.

I am also aware of cylinders, or rollers working single or double, one beside the other, provided with pins, projections, segments, or close ledges on the outer circumference.

I am also aware of two or more cylinders of wove wire or perforated, working one within the other, hung and revolved by the same shaft, for screening and cleaning ore and other material.

I am also aware of cylinders composed of parallel bars or rods made permanently fixed and stationary. These I do not claim.

This machine is a washer and screener, and has a double operation, that of washing and screening at the same time. The ore is thrown into the one end of the cylinder and passes out at the other in a clean

state, notwithstanding the cylinder rests in a horizontal position, or any required inclination.

I claim the cylinder with adjustable bars A, the perforated guard D, the hollow perforated shaft G, the perforated ledges I, the arms J and lifters K, the adjustable travelling roller N, all constructed, arranged, and operated as described, for the purpose of crushing, washing, screening, and cleaning ores or other material, either wet or dry.

No. 17,374.—SAMUEL F. HODGE, of Detroit, Michigan.—*Improvement in Ore Crushing Machines*.—Patent dated May 26, 1857.—By turning crank *d*, the clamping rollers A B will take hold of rod C, raising said rod as the rollers are turned. As soon as the flat side of roller B comes opposite the rod C, said rod is released and descends with great power by reason of the weight attached to said rod.

Claim.—The alternate lifting and dropping of a stamper hammer, or any weight, by means of a combination of a vertical rod with two clamping rollers, the periphery of one of which is not a complete circle.

No. 18,038.—THOMAS J. CHUBB, of New York, N. Y.—*Improvement in Separating Ore*.—Patent dated August 25, 1857.—The material to be acted upon is fed into the machine by means of a hopper, and drops on to shelf *m*, whence it is swept off by means of the scrapers *l* G, and drops upon the screens S, upon which it is spread and agitated by a blast of air passing upwards through the trunk of the machine, and the particles are separated in layers according to their specific gravity; the heavier substances will be retained in the chambers *a b*, while the lighter particles are caused to float uppermost, and are acted upon by scrapers *l* G, and escape through spouts *g*.

The inventor says: I do not claim the broad process of agitating substances in a receptacle, for the purpose of causing the heaviest to settle to the bottom thereof, irrespective of the means specified and described.

Nor do I claim separating substances of different specific gravity by a current of air applied on the old and well known winnowing process.

Neither do I confine my improvement to any specific arrangement of mechanism.

But I claim effecting a separation of a thin layer of finely pulverized ore into layers or strata of different specific gravity upon a perforated bed, or its equivalent, by means of applying light minute puffs of air up through the interstices of the said bed, and through a thin layer of ore evenly spread, and resting thereon as described, for the purpose of gently agitating the said layer of ore, and floating the lightest substances therein to the top thereof, and allowing the heaviest substances therein to gravitate to the bottom of the said layer on the said bed.

No. 18,085.—THOMAS J. CHUBB, of New York, N. Y.—*Improved Ore Separator*.—Patent dated September 1, 1857.—The material, having been properly screened to the desired size, is fed into hopper Q, and received on the upper part of the inclined perforated table A. The action of the bellows L, whose top plate J rises and falls at a rapid

speed, causes the material on screen A to rise and fall at the same rate, rising always in a line perpendicular to the face of plate A, but falling vertically under the influence of gravitation, and consequently passing from the higher to the lower end of the inclined bed A. By this operation the heavier particles find their way in the channels C towards the main channel D, while the lighter particles pass off through channels F into side channels b.

The inventor says: I do not claim the separation of substances of different specific gravities, by submitting them to the action of a blast of air through a screen.

But I *claim*, 1st. The employment, in combination with an inclined perforated table or bed, and a bellows operating as specified, of a number of channels, applied and arranged substantially as described, relatively to the bed and to each other, to convey away the separated substances in different directions, as set forth.

2d. The division of a bellows, applied and operating in connexion with a perforated bed, for the separation of articles of different specific gravity into numerous chambers or compartments, each having its separate valve or valves, and constituting in itself a complete bellows, for the purpose specified.

No. 18,388.—THOMAS J. CHUBB, of New York, N. Y.—*Improved Ore Separator*.—Patent dated October 13, 1857.—The nature of this improvement consists in the arrangement of thin flat strips of brass, or other material, so bent or curved edgewise that, when fastened a little distance from each other, they form an open net-work; the upper edges of the strips form a curved inclined table or bed longitudinally, and a flat or a straight horizontal line in the transverse section. Also, in the arrangement of the divided or sectional bellows below the perforated bed, and operated by a series of levers and cranks or arms on a rocking shaft made adjustable. Also, the arrangement of a chain made of cut or punched or punched and bent links, fastened to the scrapers in such a manner as to form an endless chain of scrapers, holding the edges of each scraper always in an upright position when separating or scraping.

The inventor says: I do not claim separating substances of different specific gravity by submitting them to the action of a blast of air through a screen.

But I *claim*, 1st. The arrangement of a series of strips of wood or metal, forming a convex surface on top longitudinally, and horizontal in a transverse direction, employed as a support for a perforated table or bed of wire cloth, or its equivalent.

2d. The arrangement of a sectional bellows and the mechanism for operating the same below the framing, and the perforated table or bed.

3d. The employment of a chain made of angular links riveted to strips, and connected together by pins, forming an endless chain of scrapers, in combination with a perforated table or bed, for the purpose set forth.

No. 18,672.—WILLIAM OLAND BROWNE, of New York, N. Y.—*Improved Ore Separator*.—Patent dated November 24, 1857.—The opera-

tion of this machine is, that the material is fed from the hopper O, through the centre apertures *n*, on to the sieve cloth *s*, where it is constantly irritated by the rake teeth, and the lighter parts forced to the surface by the action of the blast from the bellows through the sieve cloth, and then scraped by the scrapers over the periphery of the sieve frame into the discharge box, and, by the action of an arm attached to and revolving with the frame *m*, is carried round to the discharge outlet P, the scrapers being adjusted at such an angle as will create a proper centrifugal action in proportion to the feed and speed of the machine. The same effect is produced by feeding the material into a solid tub without a blast of air, instead of the sieve, but in less quantity.

The inventor says: I do not claim the use of air for the purpose specified; either forced in continuously or in vibrating strokes, as I am aware that such methods have been used.

But I *claim*, 1st. The arrangement of a rake with scrapers alternating and revolving over a body of ore upon a sieve, as described.

2d. The arrangement of the tub B with the bellows below the sieve, in relation to each other, for the purposes as set forth.

No. 17,385.—PIERRE PROSPER MARTIN, of Paris, France.—*Improved Ore Washer*.—Patent dated May 26, 1857. Patented in France May 13, 1856.—The material to be operated upon passes from hopper K into the cylinder A; and rotary motion being imparted to agitator B, the water and solid bodies, to the exclusion of the auriferous particles, are caused to pass down from one compartment to the other, the water being discharged through orifice S, while the auriferous particles are collected in the boxes *d*.

The inventor says: I do not claim any one of the component parts taken separately.

I *claim* the general arrangement of the apparatus as described and represented.

No. 18,406.—JOSEPH PAULL, of Clifton, Mich.—*Improved Ore Washer*.—Patent dated October 13, 1857.—This invention consists in a peculiar arrangement of, and manner of giving motion to, a suspended basin, to which the ore or mineral is supplied, and which is immersed in water, by which the ore or mineral is washed clean. The ore or mineral matter to be washed is fed continuously to the hopper, together with a stream of water by the spout K, and the tub B is kept filled with water to overflowing. The revolving movements of the basin in the water cause the ore or mineral matter to be violently agitated and undergo a constant transposition in the basin, so that the earthy matter is quickly separated from the ore, which, on account of its being far more weighty than the earthy matter, is retained in the basin C, while the dirt is washed out into the tub B.

The inventor *claims* the basin C, hopper E, the conducting tube F, and central shaft G, all combined as described, and hung on a universal joint, and operated by a crank, substantially as set forth.

No. 18,789.—JOSEPH A. BERTOLA, of New York, N. Y., assignor to Himself and JOHN STAGG, of New York, N. Y.—*Treatment of Ores of Gold and Silver*.—Patent dated December 1, 1857.—This invention or discovery is for an improvement in treating ores of precious metals preparatory to amalgamation, its object being to economize the operation by preventing loss of quicksilver, as well as to secure a large product of gold and silver.

The principle of this invention lies chiefly in submitting such ores to a treatment of pyroligneous, acetic, or other similar vegetable acid, which treatment produces certain effects upon the sulphurets of gold, whereby the metallic gold, being liberated, may thus be easily amalgamated with quicksilver.

Claim.—The use of pyroligneous, or other vegetable acids having similar chemical action, in treating gold or silver ores or "tailings" preparatory to amalgamation, substantially as described.

No. 17,336 —ALFRED MONNIER, of Camden, N. J.—*Improved Apparatus for Reducing Zinc Ores*.—Patent dated May 19, 1857.—A sufficient charge of coal being entered through F into the furnace A, it is ignited, and by the action of a cold blast through tuyere E, a large amount of carbonic acid is generated. A mixture of zinc ore, coal, and flux is then introduced through L into furnace H, which is exposed to a hot blast through K. The carbonic acid, passing from furnace A through pipes G G¹ and G, burns with the hot air, and causes the flux to unite with the earthy matter of the ore; while the zinc is oxydized, and the oxyd of zinc is immediately afterward reduced, in consequence of the excess of carbon and carbonic acid present; and the metallic zinc vapors escape at M, and are condensed in the chamber N.

Claim.—The combination of the gas generator and the reducing furnace H, arranged and operating as described.

No. 18,043.—THADDEUS FOWLER, of Waterbury, Connecticut.—*Improved Pin-sticking Machine*.—Patent dated August 25, 1857.—By revolving the hopper B in the direction of the arrow, the ledges *d* will carry up the pins and allow them to fall on to the inclined plane *c*, down which they will slide until their heads are caught by the flanges of the flanged cylinder *b*, which, by its revolution, will carry up the heads, as represented in fig. 2, until the points fall upon the inclined plane *c*, when the pins will drop into the rack *a* until the rack on that link is completely filled. By operating lever J each succeeding link is thus brought under the inclined plane; *c* is filled with pins, which afterwards, as they arrive below the crimped paper *l*, are forced through said paper in their order as they are held by the racks *a*.

Claim.—1st. The endless chain, with its racks, in combination with the flanged cylinder, (whether with or without the revolving hopper,) when constructed, arranged, and made to produce the result substantially as described.

2d. The combination of the endless chain with the revolving hop-

per, when the whole is constructed and combined substantially as described.

No. 18,831.—THADDEUS FOWLER, of Waterbury, Connecticut, assignor to the AMERICAN PIN COMPANY, of Waterbury, Connecticut.—*Improved Machine for Sticking Pins on Paper*.—Patent dated December 8, 1857.—This improvement consists in the method of crimping and clamping the paper, (sufficient for a whole paper of pins,) the manner of passing the pins through a slotted form, and the mode of inserting them into crimped paper (while it is clamped in the crimper) by the sliding form, thus sticking a whole paper, fourteen rows, or any other number, at one operation of the machine. An examination of the engravings and claim will give a further idea of the nature of this invention.

The inventor says: I *claim* the combination of the plate or form A with the slotted form C, when constructed and made to deposit the pins substantially as described.

I also claim the combination of the sliding frame E with the slotted form C when constructed and used as described.

No. 18,116 —ELIZUR WRIGHT, of Boston, Mass.—*Improvement in Pipe Coupling*.—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of a compressible packing ring *e* inserted in a groove around the pipe on each side of the joint, in combination with screw-threaded or flanged and bolted couplings, and a thimble *f* for holding the packing ring in the grooves, so as to form a water-tight joint and resist separation, by the packing ring serving as a dowel.

No. 16,663.—CALEB C. WALWORTH, of Boston, Mass.—*Improve Machine for Fitting Gas Pipe*.—Patent dated February 17, 1857.—This coupling governs the extent of the advance of the cutting tool *b*, and reverses its direction of rotation; figure 1 represents the coupling fully locked, so as to give the cutting tool the greatest amount of traverse; figure 2, a less amount; figure 3 shows the coupling at the point of unlocking, and figure 4 in the position where the direction of rotation of the driving part *d* of the coupling is changed to that of arrow *b d*; figure 5 shows part *d* of the coupling rotating in the direction of arrow *b d*, with its long face in contact with the long face of the part *e*.

Claim.—The coupling constructed with long, short, and inclined faces, substantially as described, and operating for the purposes set forth.

No. 17,482.—CHARLES BIGELOW, of Hastings, Minn.—*Improved Machine for Grooving Stove Pipe*.—Patent dated June 9, 1857.—The jointed pipe being placed upon bar B, the roller D is then passed over the seam of the pipe by operating rack bar C, the groove *r* of the roller D passing over the joint and closing said joint; and when the roller D has reached the extent of movement, the end of bar *k* strikes against ledge *u*, and lever F will be actuated, and the yoke E moved so

as to shift the position of roller D, and the flat surface *s* of roller D will now come to bear on the seam of the pipe; and as the motion of rack bar C is reversed, the joint is closed effectually. When the roller D reaches the extent of its backward movement, projection S* on bar C strikes lever F, and pin *d* will be depressed and withdrawn from bar B, said bar being thrown outward by spring *t**, so that the finished pipe can be removed therefrom.

Claim.—The roller D, having its periphery or face formed of a grooved or concave surface and a flat surface, the roller being placed within a reciprocating bar C, and within a yoke E, arranged and actuated by the lever F and ledges *u u*, as shown, whereby the roller is shifted or moved automatically at the ends of its strokes or movements, and made to groove and close the joints or seams of the pipes at one operation. Further, the bar B, when jointed to the upright A, and secured to the projection *c* by the pin *d*, as shown and used in connexion with the lever *f* and spring *t*, as described, so that said bar may be thrown out automatically from the projection *c*, for the purpose of allowing the finished pipe to be removed readily therefrom, and another placed thereon.

No. 17,393.—M. C. Root, of Toledo, O.—*Improvement in Machines for Making Stove Pipe.*—Patent dated May 26, 1857.—The metal plate O being grasped by the operator, and one edge thereof being inserted in the groove *l*, motion is given to the rollers C D, and the plate O is bent as shown in figure 3. The plate O is now placed between rollers D E, and roller E is brought in contact with the plate O, so that, as the rollers D E are turned, the plate O will be bent in a circular form, as represented in dotted lines. The bent edges are then locked together, the joint is placed in the groove *m*, and the seam is closed by the action of cylinders C D, the pressure upon the whole of the seam not being simultaneous, by reason of the slight spiral form of the groove *m*. When the seam is closed, the pipe is moved to the end of roller E, and is beaded by the action of bead *a**, concave *b**, the plates *d** and *e** serving to contract the end of the pipe, so that it can be inserted into the adjoining pipe.

Claim.—The arrangement and combination together of the edging, grooving, forming, swaging, expanding, and contracting rollers C D, E J, *a b, c d*, as described. Also, giving a spiral form to the groove *m* of roller D, as set forth.

No. 16,967.—RICHARD H. COLE, of St. Louis, Missouri.—*Improved Machine for Making Rivets.*—Patent dated April 7, 1857.—The heated end of a rod is laid into the recess in one of the die box sections *d*', fig. 1, on the wheels B and B¹, and is pressed forward until its end bears against the gauge plate *b*; and then the action of one of the cams *c* imparts such an amount of motion to the wheels B and B¹, as will carry down and match the said die box sections; and just before said sections come opposite each other, one of the cams on wheel A strikes against the journal box G, and thereby forces inwards the wheel B, and brings the inner die box section on this wheel in close contact with the corresponding section on the opposite wheel; and the

next instant one of the cams j carries forward the carriage P , and, by so doing, simultaneously throws upward the curved gauge plate b and the cutting plate e ; the elevation of the gauge plate b gives free play to the header a , and the elevation of the cutting plate e cuts off the portion of the heated rod embraced within the die-box; the long actuating surface of the said cam j holds the lower portion of the cutting plate over the mouth of the die-box, fig. 2, where it is supported by the block N ; whilst the header a is driven forward, forms the head on the rivet, and recedes again; and then the retrograde movement of the carriage P throws downward the gauge plate b and cutting plate e ; and simultaneously with said movement the wheels $B B^1$ are again moved forward to discharge the finished rivet; and to carry the end of another heated rod into the machine to be operated upon.

Claim.—First. Forming a successive series of die-boxes of a double series of sections $d d$, which are combined with the parallel peripheries of two equal-sized intermittingly rotating wheels $B B^1$, when the arrangement of the bearings of one or both of said wheels is such as to allow of a sufficient amount of lateral play thereof to enable a pair of said sections to be firmly pressed against each other at the termination of each intermittently rotary movement of said wheels, substantially as set forth.

Second. Combining the curved gauge plate b and the cutting plate e with each other, and also with the cam wheels $B B^1$, substantially in the manner and for the purpose set forth.

Also, the combination of the cam wheels $B B^1$ with the gauge plate b , the cutting plate e , and the header a , substantially in the manner and for the purpose set forth.

No. 18,738.—JOHN GRIFFIN, of Phoenixville, Pa.—*Improved Pile for Rolling Beams.*—Patent dated December 1, 1857.—The inventor, in describing his improvement, says: My improvement consists in forming the pile of two flat pieces or bars of double the alternate width of the upper and lower flange. These bars are first rolled out with a groove in them, as shown in the engravings, of about three-quarters of an inch deep and two and a half inches wide, for a seven-inch girder, for example. I then place a series of two or more bars of iron one on top of each other, as shown at c in the engraving. I then place the series c in the lower grooves $e e^1$, to retain c in position; and then I place the groove $d d^1$ in the upper piece A on top of the pile c , and place a wedge in the groove $d d^1$, in like manner as before.

Claim.—The manufacture of wrought iron I or T girders and bars, by forming the pile of grooved pieces, in combination with the intermediate webbing, arranged and combined in the manner substantially as described.

No. 18,906.—ASA JOHNSON, of Cairo, N. Y.—*Improved Machine for Rolling Cornice.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The arrangement of the series of rollers I^a , J^a , and K^a , guide n , and rollers h and h^1 , and die n^1 , for the purpose of forming sheet metal into cornice and gutters for buildings, while hot, and pass-

ing it through the machine in boiling oil, as described and for the purposes set forth.

No. 18,674.—JOHN BRYAN, of Covington, Ky.—*Application of Hot Water to Journals of Rolling Mills*.—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I would state that I am aware that cold water has been used as a lubricator for journals; and although I do not know that hot water has ever been used for this purpose, namely, lubricating, yet I make no claim to it as such in this application.

But I *claim* equalizing the temperature of rollers and their journals that are used in rolling hot iron or other heated work by means of hot water applied to said journals, for the purpose of making the fibre of the metal of which the rolls and journals are made more uniform at their point of junction, and thus lessening the liability of their breaking or separating at that point, as described.

No. 18,962.—LEOPOLD EIDLITZ, of New York, N. Y.—*Improvement in Burglar-Proof Safes*.—Patent dated December 29, 1857.—The inventor, in describing the mode of forming his invention, says: I first take a sheet *b* of boiler iron, and bend it into a series of parallel elevations and depressions of substantially the shape shown in the engravings. When thus shaped, I combine with one side of the said sheet of boiler iron a series of parallel wrought iron ribs *c c*, which pass transversely across the ridges of said sheet at short intervals, and which are combined with said ridges by means of rivets *d d*. The sheet *b*, when thus prepared, is placed in a mould in such a position that its ribbed surface will be opposite to, and at a proper distance from, the inner surface of a chill plate of suitable thickness, so that when the melted iron is poured into said mould, it will embrace the series of ribs *c c*, and solidly fill up the series of depressions between said ribs and the inner surface of the sheet *b*.

Claim.—Forming an improved burglar-proof plate (or its equivalent) by the union of an outwardly chilled hardened layer of molten iron with the ribbed surface of a zigzag sheet of iron, substantially as set forth.

No. 16,464.—JOHN BROUGHTON, of Chicago, Ill.—*Improved Sash-Fastener*.—Patent dated January 27, 1857.—On turning handle *c* from the position shown in dotted lines to the one shown in full lines, the circular rib *a* enters the socket *D* on the upper sash, bearing against spring *E*, which spring presses the sash *B* close up against sash *B'*, so as to form a tight joint.

Claim.—The employment of a spring *E* on the inner surface of the curtain *h* of the socket *D*, in the manner and for the purpose set forth.

No. 16,595.—WILLIAM W. KELLOGG, of Lynn, Mass.—*Improved Sash-Fastener*.—Patent dated February 10, 1857.—The hasp *G*, in

combination with the holes in cleat E and similar holes in sash C, serves to confine the sashes B and C at various heights, and at the same time.

Claim.—The use of the hasp G, constructed as described, and operating in connexion with the perforated cleat E and upper sash C, in the manner and for the purpose set forth.

No. 16,671.—THOMAS FLOYD, assignor to Himself and G. H. Merklein, of Chambersburg, Pa.—*Improved Sash-Fastener.*—Patent dated February 17, 1857.—It will be seen that, in the position of catch D, represented in the engravings, the sash B will be prevented from coming down by the point *b* slightly catching into the sash. By depressing lever E, so as to clear the sash of the two catch-points *b b'*, the sash will be free to be lifted or lowered; by still further depressing lever E, the point *b'* will catch into the sash, and the latter will be prevented from being raised.

The inventor says: I do not confine myself to the application of the sash-fastener, as shown, as I may find it convenient to let it into the frame, causing it to operate against the edge of the sash style; to do so it will only be necessary to make the handle E at right angles with catch D, in which position it will work equally well against the edge of the style, and be found as convenient as at present applied.

I claim the triangular or catch-lever D and thumb-lever E, in combination with the cylinder F, the follower H, with cross-piece I attached, and spring G, as described, and for the purposes set forth.

No. 17,910.—F. TARBELL, of Boston, Mass., assignor to Himself and D. C. BICKNELL, of the same place.—*Improved Sash-Fastener.*—Patent dated July 28, 1857.—As the plate B is moved upwards by taking hold of the thumb-piece *d*, the bolt C is drawn inwards by pin *g* of the bolt moving in the oblique slot *f*, and the sash is released, while, by pressing down the thumb-piece *d*, the sash is fastened.

Claim.—A sash-fastener made as described.

No. 16,695.—ARCHIBALD ROBBINS, ALANSON SHERMAN, and LAWSON R. BIGELOW, of Watkins, N. Y.—*Improved Saw-Filer.*—Patent dated February 24, 1857.—The arc J is movable upon thumb-screw K. The arc having been set so as to bring the direction of the file at the right angle across the saw D, the socket-screw *b* is then tightened, and the file *e* is then operated by means of handle R. Having filed the teeth upon one side, the standard M is placed in the opposite socket *b*, and turned to the same relative angle that it before had.

Claim.—The combination and arrangement of the sliding carriage F, the index-wheel H, arc adjuster J, and guide-frame M, operating in the manner and for the purpose set forth.

No. 18,224.—JASPER J. NEAR, of Oneida, New York, assignor to ELI NEAR and LEVI VANDUSEN, of Madison county, New York.—*Improved Saw-Filer.*—Patent dated September 15, 1857.—By removing one of the pins M, and swinging the file L round on the other pin M, the saw *z* can be inserted between the jaws A, which are then drawn

together by means of screw *c*; by then inserting again pin *M*, and by adjusting nuts *P* to make the springs *N* press file *L* against the saw *z*, the file may be traversed by vibrating levers *E*.

Claim.—A clamp to gripe the saw, substantially as described, and carrying hinged vibrating arms provided with springs for holding and operating the file, substantially in the manner described.

No. 16,521.—A. M. BEARDSLEY, of Constantine, Michigan.—*Improvement in Filing Saws*.—Patent dated February 3, 1857.—The file *H* is placed in an inclined position corresponding to the inclination of the upper side of the saw teeth, and the other file *I* is placed horizontally so as to correspond to the under side of the saw teeth. By this means both edges of the teeth may be filed by merely operating the bed *E* to which the files are attached, and raising or lowering the guides so that each file may act upon its proper side of the teeth.

Claim.—The two files *H I* arranged as shown, and attached to the reciprocating bed plate *E*, which works between guides on a movable or adjustable plate *B*; the bed plate *E* being operated by the lever *F*, or its equivalent, and the plate *B* by the lever *J*, substantially as shown for the purpose specified.

No. 18,684.—JACOB ERDLÉ, of West Bloomfield, New York.—*Improved Machine for Filing Saws*.—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, 1st. The two adjustable or elastic bars *G i* attached one to the permanent bar *E* and the other to the bar *f* of the clamp, and arranged as shown, whereby the movement of the saw may be fed to the file in a horizontal or curved direction, corresponding to the form of its cutting edge, or to the line of its teeth, as described.

2d. I claim placing the file-bar *O* within the frame *N*, pivoted or hung as described, so that the position of the file may be changed relatively with the saw, as described.

3d. I claim the arrangement of the lever *v*, shaft *M*, pawls *K L*, wheel *J*, provided with ratchet teeth *o p*, as shown, and the pinion *n* and rack *m*, whereby the saw is fed to the file in either direction, as described.

No. 17,522.—GOTLOB C. SCHNEIDER, of Washington, D. C.—*Improved Hob for Cutting Screw-Chasers*.—Patent dated June 9, 1857.—This hob is formed on its circumference with a number of parallel cutting edges *a*, which are in planes at right angles to the axis of the cylinder, instead of having the cutting edges arranged helically around the cylinder. In cutting screw-chasers with this improved tool, it is secured in a lathe; and as it is caused to revolve, the chaser to be formed is held against the teeth *a* in an oblique position; and as this position can be changed in different chasers, it follows that screw-chasers having various inclinations can be cut with the same hob.

Claim.—The hob for cutting the threads of screw-chasers, constructed in the manner described.

No. 17,563.—JAMES M. EVARTS, of Westville, Connecticut.—*Improved Screw-Cutter*.—Patent dated June 16, 1857.—The chuck A is attached to a mandrel, and is made to rotate; the rod D, on which the screw is to be cut, being stationary. The wheels C are adjusted the required distance apart by turning the pinion c, by means of a wrench; and as the chuck A rotates, the rod D is passed between the cutter wheels C, which cut the thread on the rod; and as the rod is fed between the wheels, said wheels are caused to rotate slowly, so that fresh cutters are continually presented to the rod.

The inventor says: I do not claim the chuck for adjusting the dies nearer to or further from each other, for that is a well known device.

But I *claim* the rotary dies C, placed within sliding or adjustable plates or sockets B, attached to the chuck A, or an equivalent device, for the purpose set forth.

No. 18,909.—WILLIAM KENYON, of Steubenville, Ohio.—*Improved Screw-Cutting Machine*.—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, first, the combination of dies which have an angular cutting extension or shoulder e on their front face, with the eye screw bolts f h, and a chuck which has straight radial grooves in its face, as and for the purposes set forth.

Second. I claim providing the peculiar oil reservoirs in the front of the chuck, between the cutting dies, in the manner and for the purposes set forth.

Third. I claim the face plate, consisting of a short hollow cylinder, with openings in its periphery, as and for the purposes set forth.

No. 17,187.—WILLIAM N. ADAMS, of Olmsted, Ohio.—*Improvement in Screw-Cutting Machines*.—Patent dated May 5, 1857.—The instrument is attached to the spindle of the lathe by means of shank A¹, and the ring R is moved forward to close the burrs B. A bolt is then placed in the clasp of the lathe, and the instrument is caused to rotate, and the bolt rod caused to enter between the burrs B, by which means the thread is cut upon the bolt. As the end of the bolt comes in contact with the screw I, the pressure upon said screw presses backward plate C, reversing the position of levers D, and opening the burrs B, thus releasing the newly cut screw bolt.

Claim.—The construction of the branched body A, the disk C, sliding fulcrums E E, levers D D, and adjustable releasing screw I, combined in such a manner as to gauge the size of the screw and depth of screw thread, and to release the screw as soon as cut to a determinate extent, substantially as described.

No. 16,414.—CALEB C. WALWORTH, of Boston, Mass.—*Improved Screw-Feeding Gear*.—Patent dated January 13, 1857.—Motion is imparted to shaft c by means of a pulley A, and the tool b on shaft c is turned to cut a screw thread into a pipe joint p. The cogged wheel i meshes into pinion h and rotates feed screw z. The nut g can be set in and out of gear with this feed screw by means of cam n on shaft j; and, when in gear with the same, the screw is moved to one or the other side,

and imparts a lengthwise motion to shaft *c*. When the cam *n* is turned to such a position as that nut *g* will release the feed screw *z*, then the springs *x* cause the screw to return to its mean position between them.

Claim.—The combination of a feeding screw or nut, arranged so as have an endwise movement, with springs for the purpose of insuring the engagement of the screw and nut, and returning either of them to a mean position when released from strain.

No. 18,669.—BARNABAS H. BARTOL, of Philadelphia, Pa.—*Improvement in Screwing Tubes into Vacuum Pans*.—Patent dated November 24, 1857.—By referring to the engraving, A in figure 1 shows the tube, B B the conical ends, and C C the tube sheets.

Figures 2 and 3 show the holes in the conical ends, by means of which the tube is screwed in place.

The inventor says: I would state that I do not claim screwing tubes into the sheets, as this has been done.

But I *claim* making the tubes many-sided in their interior parts, so that by the use of a many-sided long mandrel, fitted into said interior, they may be placed, removed, or replaced, without the necessity of having the ends of said tubes project beyond the tube sheets, as set forth.

No. 17,932.—PETER HOFFNER, of Rising Sun, Indiana.—*Improvement in Cutting Screws*.—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—In combination with the die-stock *b*, the volute or spiral spring *d*, arranged and operating substantially as and for the purposes set forth.

No. 16,803.—THOMPSON NEWBURY, of Taunton, Mass.—*Improved Machine for Cutting Screws*.—Patent dated March 10, 1857.—When the elevator (which swings about pivot D) is down, its upper edge lies even with or just below the bottom of the pan C, and the blanks fall into trough K, and hang by their heads, the heads being wider than the trough. As the elevator is raised, it carries up a supply of blanks, and slides them between the fixed ways L, when they descend into the carrier *b*. This carrier conveys the blanks to nippers *m*, which take hold of each blank, as operated upon by the threading and pointing tool S.

Claim.—The jointed elevator passing through the bottom of the feed pan, substantially as set forth.

The vibrating slotted guide piece, fixed to the carrier shaft, operated by arm M and pin *n*, as set forth.

Giving the threading tool, for the purpose of pointing the blank, a motion independent of and slower than that required to effect the threading, substantially as set forth.

The catch wheel C¹, with its pawl and stop, in combination with the leader worm T, as set forth.

No. 17,655.—IRA A. RICHARDS, of East Brookfield, Mass., assignor to SILAS STEVENS, of the same place.—*Improved Taps and Dies for Cutting Screws*.—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. Cutting away the teeth of taps and eyes on one side, substantially as and for the purposes set forth.

Second. Making the opposite scores *d*, which are parallel with the slides in which the two parts of a die work, or at right angles to the partition of the die, both on the same side of the line drawn through the centre of the die, substantially as and for the purposes set forth.

No. 17,437.—JOHN L. MASON, of New York, N. Y.—*Improvement in Manufacturing Screws of Thin Metal*.—Patent dated June 2, 1857.—The thin metal plate *c* C is placed between the chucks A and D of a lathe, and the metal is then compressed between said two chucks in the well known manner. The chuck A has a screw thread formed on its circumference. By now giving revolution to the chucks, and pressing a dull tool against that portion of the face of the piece C which extends outside the diameter of the chucks, the metal is formed in shape of a cup around chuck A. The point of a tool formed like the section of a screw is then applied to the metal, and the latter is pressed into the screw threads of chuck A, whereby the screw is formed on the metal cylinder.

Claim.—The mode described of forming screw threads on cups, hollow cylinders, or hollow cones, of thin soft metal, substantially as described.

No. 16,778.—DANIEL M. ROBERTSON, of Manchester, N. H.—*Improvement in Pointing and Threading Screws*.—Patent dated March 3, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I claim a pointing tool, arranged in connexion with one or a series of threading tools, and traversed slower than the threading tools, and so far in advance of them as to form the point of the screw blank, and prepare it for the threading tools, substantially as described; and I make this claim whether the pointing tool is traversed by the devices described, or by such other devices as will answer the purpose.

I claim the plate or guide A¹, when made to traverse substantially as described, whether it is operated by the devices described or such others as will answer the purpose.

I claim the guide or rest W, when made to traverse substantially as described, whether it is operated by the devices described or such others as will answer the purpose.

No. 18,914.—JOHN E. LAYTON, of Pittsburg, Pa.—*Improved Furnace for Tempering Scythes*.—Patent dated December 22, 1857.—The nature of this invention consists in constructing the top of a furnace in such a manner that the shape of said top, or a portion of the same, and of the openings provided therein for the escape of the flame or heat of the furnace, conforms with the edge of the article to be hardened

or tempered, whereby the said edge, in being held into or over the said openings, will receive a uniform degree of heat throughout its whole length, suitable for the hardening or tempering process; and also in providing two blocks or projections *g g* on the top with openings in the sides facing each other, whereby any particular spots or portion of the article, when brought between the blocks, can be heated for the purpose of correcting any unevenly tempered spots in the article.

The inventor says: I do not claim the arrangement of the body of the furnace, nor the introducing of a current of air under the grate; as these are not novel, and have been used before.

But I *claim*, first, constructing the top of a furnace in such a manner that the same, or a portion *b b* of the same, is curved or shaped so as to conform to the curve or shape of the edge of the article to be hardened; and providing in the top (thus shaped) an opening *C C*, or a number of such openings, as and for the purpose set forth.

Second. I claim providing in the top of the said furnace an opening *f f*, or a number of such openings, of such a shape as to conform to the curve or shape of the article to be tempered, substantially as and for the purposes described.

Third. I claim providing on the top plate of the said furnace two blocks *g g*, with the openings *i i*, as and for the purpose set forth.

No. 17,872.—C. P. CROSSMAN, of Warren, Mass.—*Improved Machine for Tempering Scythes*.—Patent dated July 28, 1857.—The scythe *E* being properly heated, it is placed between the jaws *D*, the back of the scythe resting on the boxes *h*. The operator then depresses the treadle *B*; and as the plates *d* of the levers *F* pass between the vertical guides *a b*, the jaws *D* will be forced together, and will firmly grasp the scythe *E*, which, when the treadle is fully depressed, will be immersed in water of the tank *A* and tempered.

Claim.—The employment, within a suitable water-tank *A*, of a pair of movable jaws *D* and boxes *h*, for the purpose of seizing, holding, and conveying the scythe blade, all substantially as described.

No. 17,996.—BENJAMIN F. HOOPER, of Albany, N. Y., assignor to Himself and RANSOM BALLOU, jr., of the same place.—*Improved Press for Shearing and Punching*.—Patent dated August 11, 1857.—The revolution of the wheel *W* by its pin *G*, operating upon cross-pieces *E*, impels the beam *D* backward and forward; which motion, by the operation of slot *k* upon pin *r*, propels the punch and shears vertically with a power proportional to the difference between the circuit of wheel *G* and the distance *x z*.

Claim.—The employment of the beam *D*, having an inclined slot in its extremities carrying the pins on which the punch and shears are suspended, as described, and operated in the manner substantially as set forth in the specification.

No. 18,025.—TIMOTHY F. TAFT, of Worcester, Mass.—*Improved Shears for Cutting Metal*.—Patent dated August 18, 1857.—The cogged wheel *G* is cast in one piece with the lever *G* and the bearings *P* of said wheel turn, respectively, in the grooves *N* of the slide *M*, to which

the blade F is secured, and in the grove O of the iron frame of the machine. By operating lever G, the part M is raised and lowered as the wheel H meshes into the teeth of the inclined rack D, and the guide roller I passes over the incline E.

Claim.—The rolling lever upon an inclined plane which is upon the side or blade holder, substantially as specified.

No. 16,334.—ANSON HARDY, Dorchester, Mass.—*Improved Rotary Shears.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claims and engraving.

Claim.—Dispensing with the top beam or support, as commonly used, and supporting the carriage B on the lower beam C, to which the straight knife G is attached, by which means is avoided the expense of and objection to a top beam.

Also, the use of a revolving circular knife A, when operated by two or more gears that can be regulated so as to give any amount of drawing cut that may be required.

No. 18,506.—ANSON HARDY, of Boston, Mass., and GEORGE A. ROLLINS, of Nashua, N. H.—*Improvement in Rotary Shears.*—Patent dated October 27, 1857.—Two rails L M are secured to the base plate, bed, or frame A, parallel to each other, and furnished, one or both, with grooves, in which the flange *e* on the carriage N may take to hold it thereto as it traverses said rails. A hinged stop *f* is placed on the inner side of one of the rails against which the carriage will stop when the piece *f* is raised up, and rests against the stud *g*, but will pass over when the piece *f* is turned down, as shown in the engraving. This stop *f* must be so placed that when the carriage is held by it the vertical axis of the clamps *h i* shall be in line with a vertical plane drawn through the cutting point of the blades F G. The clamps *h i* are so arranged as that they may freely turn on their axis, whilst the upper one *h* may be run down close to the lower one *i* by means of the screw and hand lever O.

The inventors say: We are aware that the rotary shears have been used in connexion with rotating clamps for cutting sheets into disks; this we do not claim.

But we *claim* the particular arrangement of the shears, carriages, clamps, and stops for cutting metals, as set forth.

No. 17,452.—DAVID B. ROGERS, of Pittsburg, Pa.—*Improved Machine for Making Shovels.*—Patent dated June 2, 1857.—The heated metal plate being placed in the hollow die K, rotary motion is imparted to crank shaft S, and the bed plate L is drawn over roller Q by the action of crank *i* and pitman J, and the pressing rollers P and O press down the upper die R, which is pivoted to the plate L, thus pressing the plate into the required shape.

Claim.—The use of the rollers O P Q, in connexion with the dies K and R and the pitman J J, arranged and operating in the manner specified.

No. 18,294.—ORRIN NEWTON, of Pittsburg, Pa.—*Improvement in Spikes*.—Patent dated September 29, 1857.—This invention consists in having the sides of the spike made in concave form; A represents the spike, each side of which is made of concave form, and is nearly a semi-circle when cut transversely, as shown in fig. 2. The edges *b*, formed by the junction of concave sides *a*, are brought to a sharp edge by basils at each side. The point at the head of the spike, and also at the end, are of the usual form.

Claim.—The inventor claims the construction of the spike with concave sides and edges.

No. 16,958.—HORATIO BATES, of New York, N. Y.—*Improved Mode of Clinching Spikes*.—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that a clinching piece, in the form of a small spike, has been driven by the side of a spike to lock the same by its action against a jog or off-set on the adjacent side thereof, as described in the patent of J. H. Wigant; but that mode of locking the spike requires the spike to be specially constructed for the purpose, and I consider it less secure, while it is a more expensive mode of confining the spike than my method, which is applicable to common spikes or wrought nails of any kind, and makes the clinch on the spike or nail itself. I disclaim any such method of locking the spike.

But I *claim* securing a spike or nail by boring a hole in the timber of less depth than the spike or nail itself to receive it, and inserting thereinto, before the spike or nail, a ball *a* or lump of metal of substantially similar character, to deflect the point thereof when it is driven, and thereby cause it to clinch itself, substantially as described.

No. 16,483.—JAMES HARRISON, jr., of New York, N. Y.—*Improved Machine for Making Coiled Springs*.—Patent dated January 27, 1857.—In this machine, rollers *g* *g*¹ *g*² are operated, in connexion with a single cone mandrel D, to produce double conical coiled springs by a continuous operation. As many springs as can be manufactured from a piece of wire of a certain length are formed by and delivered from the machine without stopping it. By this improvement these springs are produced rapidly, cheap, and of a superior quality.

Claim.—First. The combination of a revolving mandrel D and two or more grooved rollers, arranged and operating together in any manner substantially as described for the purpose set forth.

Second. The employment of an adjustable springing bed E to support the roller carriage F, or otherwise, in an equivalent manner, applying springs under or at the back of the roller carriage, for the purpose of enabling the rollers to accommodate their movements exactly to the longitudinal profile and varying diameter of the mandrel, and thus insuring their proper operation.

No. 18,991.—DANIEL G. ROLLIN, of New York, N. Y.—*Improved Machine for Making Volute Springs*.—Patent dated December 29, 1857.—In forming double volute springs, plates of sheet steel are employed. These are heated and are then introduced underwise, one at a time, be-

neath the mandrel B upon the support I, until the central part of the plate is beneath the mandrel. Before each plate is introduced, the conical rollers H are put in motion; and as they revolve, they bear against the exterior face of the plate and roll it down into spiral coils. In effecting this operation the edges of the volutes of the rollers bear against the edges of the spring plate, and thus direct it in coiling, so that it assumes the proper conical or volute form.

The inventor says: I *claim* the combination of a conical roller with a mandrel, so as to coil a volute spring, as set forth.

I also claim the combination of two conical rollers moving in opposite directions, with a double conical mandrel, so as to coil a double volute spring at one operation.

I also claim directing the coiling of the plate into a volute spring so as to cause it to assume the desired conical form by means of the volute upon the conical roller, which volute is turned in a direction the reverse of that in the spring to be formed.

No. 16,794.—PERRY G. GARDINER, of New York, N. Y.—*Improved Machine for Shearing Steel Plates*.—Patent dated March 10, 1857.—The stop *m* is adjusted so as to bring the end of the steel plate, when placed in the shears (when open), at the right position for the length of the strip to be cut off; and the plate T is adjusted at such a distance from the cutting edges of the shears as will regulate the width of the strip to be cut off at the beginning of the cut; and the guide bar *r* is adjusted upon its table so that, upon the steel plate being pressed against it, it will, in connexion with *m*¹ and T, bring the plate between the shears so as to cut the strip off at the required width, length, and angle. The lever S is then brought quickly down upon the steel plate, and it is thus held firmly and accurately for the shears to operate upon it.

Claim.—The arrangement of the movable bracket-plate M so as to adjust the lower steel cutter *b* to the upper steel cutter *f* as required, the adjustable stop or guide-plate T *m*¹ and the guide-bars *q* and *r* upon the tables attached to M, and the eccentric lever S; the whole combined, arranged, and operating in connexion with the shears, in the manner and for the purposes above described.

No. 17,172.—HENRY A. SEYMOUR, of Burlington, Conn.—*Improvement in Tempering Steel Plates*.—Patent dated April 28, 1857.—The plates to be tempered are heated and placed between the two water-circulating boxes B, one of which can be moved close up to the other by means of lever H acting on shaft F, the box sliding on rails E, the perforations of the plates D being filled with preparations ordinarily used for hardening and tempering.

Claim.—The employment of the perforated plates D D and the water-cooling boxes B B, substantially in the manner and for the purpose as set forth.

No. 16,793.—PERRY G. GARDINER, of New York, N. Y.—*Improved Machine for Coiling Steel Springs*.—Patent dated March 10, 1857.—The steel plate is placed in a heated state upon the table T, and between the ways 15, and is forced through between the rollers *n* and *n*¹.

into slot 10 in the mandrel *d*. The mandrel is then turned, and the steel plate is wound upon the cone *d*.

Claim.—I *claim*, first, the cone mandrel *c d*, constructed in two pieces, so that the spiral cone will slide off and upon the straight part of the mandrel, the straight part having the slot or groove, and being an eccentric, so that one edge of the slot will be lower than the other, and gradually rising round to the other edge or side of the mandrel, as above described.

2d. The construction and arrangement of the sliding frame T, for carrying or feeding up the steel plate upon the cone mandrel, and having attached to it the table Q, self-adjustable to any required inclination, for supporting and holding the steel plate while being drawn in upon the mandrel, and sustaining the adjustable rollers *n' n*, with their adjustment, to suit any required thickness of the steel plate.

3d. The arrangement of the loose or sliding pressure roller U, so as to have the lateral motion upon the axle *b*, by means of the arms V V' attached to the sliding frame T, and the simultaneous graduated downward movement to press and guide the steel plate upon the spiral cone.

4th. The combination of the sliding frame T and the parts attached to it, and the pressure roller U, and the intermediate guide-plate 18, with the cone mandrel *c d*, arranged and operating in a direct motion, or reversed, as described.

5th. The arrangement by which the wheel G is thrown in and out of gear, so as to connect or disconnect the shaft L with the shaft S'; by which connexion or disconnexion may be made by hand or by the operation of the machine itself, at the proper moment, in the manner and by the means above specified.

No. 17,140.—ALEXANDER HENRY DUFRESNE, of Paris, France.—*Improvement in Gilding and Ornamenting Steel and other Metals.*—Patent dated April 28, 1857.—This invention consists in coating metals incapable of direct amalgamation with copper, after which process they can be gilded or silvered in the usual manner. The articles can be ornamented by protecting the design with a coating of varnish or other protecting matter, when the metal is exposed to the action of acid, which produces the design.

The inventor says: I do not confine myself to the precise working details laid down, as the same may be modified according to the requirements of each operation, without departing from the principle of the invention.

But I *claim*, first, the application of gold and silver to metals incapable of direct amalgamation by means of the processes described.

2d. The employment of photographic, heliographic, and printing processes for the production of the reserves on the metallic surfaces, to be operated on by the means described.

3d. The use of chromic acid for the destruction of the nickel, copper, antimony, or other metal employed in these processes, as described.

No. 17,590.—E. A. SNEAD, of Tioga, New York.—*Improvement in Wiring Tin Pans.*—Patent dated June 16, 1857.—The tin pan being

formed as described in No. 17,589, a suitable wire is placed underneath the upper bent edges of the sides of the pan, and these edges are placed, one at a time, upon the bed R, and below the bar P of the machine illustrated in No. 17,589. The treadle K is then depressed, and the bar I, as it descends, throws the segment bar P down by means of links a^* , and the bar P forces the bent edge and wire into the recess d^* of the bar Q; and when in this position, the bed R is moved outward by the action of link a^* ; at the same time the oblique sides of the projections b^* will actuate bar Q, causing the upper edge of recess d^* to clasp the edge of the pan over the wire as represented in fig. 2.

Claim.—The combination of the segment bar P, vibrating bar Q, and bed R, the bar P, being operated from the sliding bar I, through the medium of the link a , and the bar Q being actuated by the bevelled or inclined projections b , the whole being arranged as described for the purpose set forth.

No. 17,738.—ROCKWELL HAZEN & VOLNEY GIBBS, of Homer, Michigan.—*Improvement in Upsetting Tire.*—Patent dated July 7, 1857.—The heated tire is placed between the plates I and J, and the plate I is moved up the requisite distance against the tire by turning screw H, the wedges L are then driven downward, and the edges $p q$ are forced into the tire and prevent it from slipping. By now raising the plate C, by means of screw D, the blocks B are forced together in consequence of the oblique projection d fitting in the oblique grooves of the plate G, and the tire is compressed or upset as it is firmly clamped between the knives $p q$.

Claim.—The sliding blocks B B, with knives $g g$ attached, and the heads L L fitted in slots in the plates n , to which the blocks B are attached, the inner blocks k having knives p attached, which knives are actuated by the wedges L; the above parts being used in connexion with the plates I J, and the whole combined and arranged as described for the purpose set forth; it being understood that we do not claim separately either of the parts described, but the whole when arranged to operate conjointly as specified.

No. 16,331.—RUSSELL W. GATES.—Homer, Michigan.—*Improved Machine for Upsetting Tire.*—Patent dated January 6, 1857.—The tire, having been heated, is placed between the jaws E and clamping blocks C, where it is securely dogged by means of screws F. The follower H having been adjusted, the screw shaft I is revolved by crank J, and causes the blocks C to approach each other simultaneously, thus shortening the space between the dogged portions of the tire.

The inventor says: I am well aware that various devices are employed in machines for upsetting iron, such as compound levers, cams, screws, &c., and therefore do not claim any of these things, either single or in combination.

I claim the use of the right and left threaded screw shaft I constructed and arranged as described, and operated in connexion with the blocks C C, for the purpose set forth.

No. 18,553.—SAMUEL PENBERTHY, of Chicago, Illinois.—*Improved Method of Expanding Tires*.—Patent dated November 3, 1857.—This invention consists in applying a portable furnace to the tire while on the wheel, and the wheel attached to its axle or shaft; the furnace being so constructed that it may be applied to the tire at any point, and by heating a section thereof cause the same to be sufficiently expanded that it may be removed from the wheel or adjusted upon it without detaching the wheel from the locomotive or vehicle, nor from its axle or shaft.

The inventor says: I do not confine myself to the precise construction of furnace as shown and described, for it is obvious that various modifications of the same may be successfully employed for the purpose, although the described apparatus or contrivance would probably be as convenient and as simple as any that could be devised for the purpose.

I *claim* expanding the tires of locomotive and other heavy wheels while on their axles or shafts, and connected with their vehicles or locomotives, by means of a portable furnace, arranged as shown, or in any proper way, so that the same may be attached to the tire at any desired point, as set forth.

No. 18,971.—WILLIAM HART, of Mayville, Wisconsin.—*Improvement in Blacksmiths' Tongs*.—Patent dated December 29, 1857.—A represents the handles of the tongs, which are curved across each other, and one connected by a pivot *a* in the usual manner. The ends of the shanks *b b* of the handles are forked, as shown in the engraving; and jaws B are fitted thereon, one jaw in each fork. These jaws may have straight and oblique sides and are fitted on axes *c*, which pass through or have their bearing in the sides of the forks, the jaws being allowed to turn freely on their axes.

Claim.—Constructing the tongs with revolving jaws B B, placed or fitted in the shanks *b*, substantially as described for the purpose set forth.

No. 18,970.—JAMES HALL, of New Haven, Connecticut.—*Improved Tool for Turning Journals*.—Patent dated December 29, 1857.—A is a hollow cylindrical cutter box of a length equal or nearly so to the journal to be turned, and of an internal diameter somewhat larger than the rough journal, divided longitudinally into two equal parts, each of which is provided with lugs *a a* at each side to receive screws *b b*, which attach them together. B B are the cutters. C C is a metal ring, divided diametrically into two different parts, and fitted to a groove turned round the interior of the cutter box A A, each of the said parts being hinged by a separate pin *d* to a handle D; and opposite to their hinges they are provided with lugs *e e* to receive a screw *f*, by which they are kept closed upon the cutter box. *g g* are two pawls pivoted upon the handle D.

The inventor says: I do not claim to be the first inventor of a revolving cutter stock for turning journals, as I am aware that such a contrivance has been used for turning a crank and other articles.

But I *claim* the combination, substantially as described, of the

divided hollow cylindrical cutter box A A, furnished with ratchet teeth on its exterior, and tightening screws *b b*, and the divided ring *c c*, handle D, pawls *g g*, and fastening screw *f*; the whole operating as set forth.

No. 17,301.—J. HENRY STIMPSON, of Boston, Massachusetts.—*Improvement in Heating Soldering Tools by Gas*.—Patent dated May 12, 1857.—The gas enters through the flexible pipe G and passes into the metal pipe N, to which the handle H of the soldering tool is secured; the gas escapes through the openings of the perforated cylinder E, and when ignited encloses the coppers S in a sheet of flame. When a copper is sufficiently hot it is taken from the stand, and the bolt *n*, being thus released, shoots over the aperture of pipe G, thus preventing any escape of gas. Upon the copper being replaced, the pipe N pushes back the bolt *n*, and the gas, escaping through cylinder E, takes immediately fire from the flame of the next copper.

The inventor says: I do not claim using flexible tubes or a hollow handle for heating soldering tools by gas, as this has been done before.

But I *claim* the perforated cylinder E, enclosing the soldering copper, in combination with the cylinder or chamber C C, which concentrates the heat, as stated.

Second. Detaching the soldering tool, and regulating the supply of gas by compressing the pipe G, substantially as described.

No. 16,363.—NATHANIEL WHITMORE, assignor to G. W. KEENE and N. WHITMORE, of Somerville, Mass.—*Improvement in Making Cop Tubes*—Patent dated January 6, 1857.—The blank represented in dotted lines, fig. 3, is placed in the conical tube H, against the hollow part *d* of the backing *b*; and as the rod I descends, the shoulder *i* bears against the upper edge of the blank, pressing it through the cone H, and thence between the rollers K, where the pipe is closed. As the pipe passes from the rollers, the spindle I carries it into the receiver N, in which it is flanged, as represented in fig. 2, the tube being supported by step O P.

Claim.—The tube H with its backing *b*, in combination with the spindle I, operating in the manner substantially as set forth for the purpose specified.

Second. The tubular step for the support of the tube while it is being flanged, in combination with the receiver N, operating in the manner substantially as set forth.

No. 16,630.—WILLIAM S. PLATT, assignor to Himself, ALFRED, and CLARK M. PLATT, of Waterbury, Conn.—*Improvement in Making Seamless Tubes*.—Patent dated February 10, 1857.—A is the stationary frame; B B B B are vibratory cross-heads, one for each sector; *a a a a* are the sectors which are made to vibrate by means of cogs on their outer circles and racks *d* upon the crossheads B, the lower ends of the said sectors being hinged to the frame by means of rods *e e e e*; *b* is the ingot; *c* the mandrel. The grooves in the lower edges of the sectors are made tapering, as will be seen from fig. 4, for the purpose of gradually operating upon the metal.

Claim.—So forming the groove upon each sector that the breadth and depth thereof shall gradually diminish from one end to the other, whereby the size of the central hole, formed by a set of the said sectors when arranged for operating, shall increase or diminish as the sectors vibrate or rotate, in the manner and for the purpose set forth.

No. 16,395.—WILLIAM OSTRANDER, of New York, N. Y.—*Improved Machine for Rolling Tapering Tubes.*—Patent dated January 13, 1857.—This machine consists substantially of the three rollers *b b e*, between which the sheet metal is introduced, as represented in figure 2; the upper roller *e* being of a taper form, the rollers *b* cylindrical, and composed of a number of disks, for the purpose of imparting to the different points of said rollers the varying velocity of the circumference of the conical roller *e*.

Claim.—The combination with a tapering mandrel of cylindrical rollers formed of disks or sections, as described, for the purpose of rolling a tapering tube, substantially as set forth.

No. 18,205.—C. JILLSON, of Worcester, Mass.—*Improved Machine for Pointing Wire.*—Patent dated September 15, 1857.—The wire to be pointed is inserted through hole *v*, the end of the same pressing against the end *m* of lever *E*, while the cutter *C* commences to cut at the end of the wire. As the wire is turned and fed to the cutter, it presses against the lever *E*, turning it on pin *i*, whereby the pattern *o* presses against roller *c* of the knife-stock *D*, operating the shank *B* and tool *C*.

Claim.—Causing the wire that is being pointed to force the cutter away from the point that is being cut, but forcing it away controlled by a pattern which regulates the form and the taper given to the wire; the whole being accomplished by means substantially such as herein set forth.

No. 16,790.—JOSEPH CUSHMAN, of Racine, Wis.—*Improvement in Machinery for Making Wire-Rope.*—Patent dated March 10, 1857.—The nature of this improvement will be understood from the claims and engravings.

Claim.—I claim, 1st. The arrangement of the two sets of reels *e* and *j*, in combination with the carriage *E*, whereby the strands may all be adjusted and drawn out to the proper length simultaneously, as set forth.

2d. I claim the swinging arms *m*, in combination with the travelling top *H*, when constructed, arranged, and operating in the manner substantially as and for the purposes set forth.

No. 18,080.—BYRON BOARDMAN, of Norwich, Conn.—*Improved Machine for Wiring Blind Rods.*—Patent dated September 1, 1857.—The bar *G* is fitted in the groove *s* of the bed *F*, and the staples *p*¹ are placed on the plate *l*¹. By depressing lever *B*, the bar *f* descends, and the rod *K* is forced downward, and the two shoulders *n n*¹ are turned below the upper edge of plate *l*¹; as the arm *f* rises, the shoulders *n n*¹ rise, and the innermost staple will come to rest against shoulder *n*¹; at the next downward movement, the staple which was

between the shoulders n and n^1 passes between the guides d and d^1 ; and when rod K ascends, said staple passes under its lower end, the die forcing the staple into the rod G as it descends. The lengthwise feeding of the bar G, as performed by spring A¹ actuating lever I and bar J, which move the bar G along a proper distance until the staple last driven in shall strike against the lower end of lever E.

Claim.—The means employed for feeding the staples p^1 between the guides d^1 d^1 , and underneath the die or rod K, that is to say, the plate M, pivoted to the plate l^1 , on which the staples are placed, and provided with the shoulders n n^1 , the plate being connected with the bar f by means of the rod o^1 , substantially as shown and described.

Also, feeding the rod G underneath the guides d^1 d^1 , to receive the staples p^1 , by means of the bar J attached to the bent lever I, in connexion with the lever E, said parts being operated by their respective springs A¹ u , and also by the bar f , as described.

Further, the guides d^1 d^1 , arranged substantially as shown, to convey the staples to the rod, and at the same time also allowed to expand, so as to prevent the clogging of the same, in combination with the die or rod K, for driving the staples into the rod.

No. 16,997.—EZRA RIPLEY, of Troy, N. Y.—*Improved Wrench.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Making the levers A B, combined together as described, with wrench jaws c d so arranged that the levers do not tend to spread open when used as an adjustable wrench, as set forth.

No. 17,531.—EDWARD J. WORCESTER, of Worcester, Mass.—*Improved Wrench.*—Patent dated June 9, 1857.—The movable jaw B of this wrench can be operated by turning the screw E, the threads of which are in gear with rack D.

The inventor says: I do not claim the application of a screw and rack to the movable jaw and the stock of a wrench, in order to produce the required movements of the movable jaw with respect to the stationary jaw extended from the stock.

Nor do I claim a wrench having its movable jaw affixed to a tenon or slide made to work through a mortise in the other jaw, and to be clamped in position by the handle, as the same is set forth in the patent of Orin O. Witherell, dated December, 1856.

I claim my adjustable fork jaw wrench as made with its jaws arranged and applied to its handle as described, and with a rack and rotary screw arranged in the handle and applied to the slide of the movable jaw as specified.

No. 17,737.—JOHN H. HATHAWAY, of Millbury, Mass.—*Improved Wrench.*—Patent dated July 7, 1857.—This wrench can be adjusted to the different sizes by withdrawing the catch F from the slips X, when the sliding jaw B is free to move either way with facility; and by pressing the catch F between two of the slips X, the jaw B is secured in its position.

The inventor says: I do not claim the particular forms or arrangements shown and described; neither do I claim a sliding jaw when held by a catch, as such principle of holding it is not new.

But I *claim* making the ratchet or part corresponding thereto of separate pieces, between which the catch enters, substantially as set forth.

I also claim the aforesaid ratchet or series of slips, in combination with the stationary and sliding jaws, or their equivalents, when constructed and operating substantially in the manner and for the purposes above set forth.

No. 18,135.—H. M. CLARK, of New Britain, Conn.—*Improved Wrench*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—As my improvement on wrenches, the combination with a hook or claw griper *a*, hinged to the permanent stock, and acted on by spring, of a sliding rag jaw *e*, having a screw adjustment on or along the permanent stock for joint and independent action, in the manner set forth.

No. 18,266.—HENRY D. BLAKE, of New Hartford, Conn., assignor to WYLLYS H. WARNER, of New Britain, Conn.—*Improved Wrench*.—Patent dated September 22, 1857.—The handle *A* in the engraving is represented as fitted on or attached to a T piece or stock *a*, that thus forms part of the handle as it were, and to which are jointed on opposite sides of the T, by joint pins *b b'*, the shanks or extremities *c c'* of the two jaws *d d'*, the one jaw extension *c* passing loosely through a guiding recessed attachment *e* of the other jaw.

The inner jaw *d'*, or shank *c'* thereof, is provided with a thumb-piece *f*, arranged to overlap on the handle side the joint pin *b'*, which connects said jaw to the T piece of the handle, so that by pressing said thumb-piece, the two jaws are closed and brought together.

Claim.—The inventor says: I *claim* the combination with a vibrating stock or handle, arranged for action, substantially in the manner described, of the two or inner and outer sliding jaws of the wrench, jointed on opposite sides to said stock or handle, and both jaws operated or expanded and contracted in reverse directions, to effect and release gripe by the lateral throw or motion proper of said handle, in both directions of its swing, essentially as set forth.

Also, while not claiming a projecting thumb-piece to a single sliding jaw to lock or release the gripe of the same, by means of a cam or its equivalent connected therewith. I do claim providing the one with a projecting thumb-piece *f*, arranged to overlap the jointed attachment of said jaw to the stock, and forming a rigid extension as it were of said jaw to facilitate the action or movement of both jaws, substantially as shown.

No. 17,844.—GEORGE B. PHILLIPS, of Albany, N. Y.—*Improved Hand Wrench*.—Patent dated July 21, 1857.—By pressing down thumb-piece *K*, the saddle *H* will press down the pins *d* and toothed blocks *D*, and the distance of the jaws *B C* can be adjusted. On re-

leasing the thumb-piece K, the springs A will press the teeth of the blocks D between the teeth of rack *a*, and the jaws B and C are secured in their positions.

Claim.—In combination with the jaws, the arrangement described for regulating the space between the jaws and securing them when so adjusted ; that is to say, by the employment of the two head blocks operated alternately upon teeth in the upper jaw, by the spring and saddle, or their equivalents, so as to regulate the space to distances differing by half the spaces between the teeth, substantially as set forth in the specification.

No. 16,733.—B. F. JOSLYN, of Worcester, Mass.—*Improved Screw Wrench.*—Patent dated March 3, 1857.—The hammer shank A has a thread on both edges from 2 to 3 ; B the main part of the wrench having four sides, and enclosing perfectly the hammer shank from 1 to 2 ; and from 2 to 3 only two sides, and smaller, thereby allowing both edges of the hammer shank to project the depth of the thread, so as to fit into the thread in the nut C, which encloses both parts from 2 to 3. Ring D serves as a bearing for the nut C. By turning the nut C, the hammer with the shank will move out.

Claim.—A hammer shank A, with a thread on both edges, fitting into a nut, when combined with the other parts of the wrench, arranged as shown and described.

No. 16,844.—B. F. JOSLYN, of Worcester, Mass.—*Improved Screw-Wrench.*—Patent dated March 17, 1857.—This invention consists in having the shank of the lower and stationary jaw of the wrench made hollow so as to receive the bar of the sliding jaw, and also to receive the screw which is fitted within the hollow shank by the side of the bar of the sliding jaw, the screw passing through a projection on the lower end of the bar of the sliding jaw, the whole being so constructed as to make a strong and durable wrench.

The inventor says: I do not claim a hollow shank, neither do I claim a screw for operating the sliding jaw, irrespective of the arrangement shown ; but I claim the hollow shank B, with the bar F of the sliding jaw E fitted therein as shown, when the parts are used in connexion with the screw G placed within the hollow shank, and by the side of the bar F, the screw passing through the projection *f* on the end of the bar F, substantially as described, for the purpose set forth.

No. 17,609.—GEORGE C. TAFT, of Worcester, Mass., assignor to HENRY W. MASON, of the same place.—*Improved Screw-Wrench.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the mere addition of auxiliary screws to the wrench of the said Coes, and made with threads reversed in pitch with respect to the pitch of those of the primary screws ; but I claim arranging the nut G between the two male screws F and K, in connexion with applying the auxiliary female screw *b* and its support I, with reference to the handle and shank, substantially as specified.

No. 17,229.—CHARLES PINDER, of Lowell, Mass.—*Improvement in Wrenches*.—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Moving, holding, and releasing the movable jaws B by means of the double wedge or key, with its inclined planes *e* and *i*, operating against similar ones *j* and *k* formed in the movable jaw B, while the lower surface *n* of this wedge comes in contact with the inclined plane *a*, in the groove E formed in the wrench-bar A, essentially in the manner and for the purposes set forth.

III.—FIBROUS AND TEXTILE.

No. 17,120.—CLARK TOMPKINS, of Troy, N. Y., and JOHN JOHNSON, of Roxbury, Connecticut.—*Improvement in Machinery for Winding Conical Bobbins*.—Patent dated April 21, 1857.—The feature of this invention referred to in the first claim relates to the method of regulating the speed of the winding bobbin H; this is accomplished by making the yarn carriers J shift the belt Y by means of the following arrangement of parts: The twin belt-shifters L L¹, hung to the frame work at *e* e¹, linked together at e², and operated by rod L², which is hung to the shifter L at e², is slowly reciprocating endwise by arm M, fast on shaft M¹, which is operated by connecting rod M², arm N, shaft N¹, toothed sector J⁴, and arc N². The operation referred to in the second claim is performed by the following parts: The sliding rod O, connected with the revolving bobbin H, by means of arm O¹, screw *f*, finger *g*, sleeve *h*, pawl *i*, and ratchet-wheel *s*; pawl *i* is operated by lever P, rod P¹, rock-shaft Q, arm Q¹. The parts which embrace that feature of the invention referred to in the third claim consist of rod S and finger *m*, which serve to guide the thread, finger *m* being attached to lever *n*, which is connected with pawl *i* by rod *p* in such a manner that the tension of the yarn, in winding, shall counteract the weight of rod *p* and thereby allow the pawl *i* to engage with the ratchet-wheel *j* in the same manner that it acts when no rod *p* is attached to it, so that when a thread breaks the weight of rod *p* shall lift the point of pawl *i* out of the ratchet teeth and thereby stop the endwise motion of bobbin H. When any bobbin H is full or reaches that place in respect to the yarn carrier J where the winding thereon should end, the handle T then pushes the catch *u* from the belt shipper U, thus allowing spring *s* to throw the card X from the driving pulley W to the loose pulley V, and thereby stop the rotary motion of bobbin.

Claim, 1st. The manner described, in which the speed of the winding bobbins is changed so as to constantly draw the yarn from the fixed bobbins with uniform or nearly uniform swiftness, and thus secure more even tension on the winding yarn, and thereby make the new bobbins of more uniform density than if they were revolved with uniform velocity.

Also in machines for simultaneously winding a series of such bobbins, giving each bobbin spindle of the series the proper independent re-

treating movement from the yarn carriers as the winding progresses, by means of the mechanism described, or its equivalent, for the purpose specified, in contradistinction from giving each bobbin the separate retreating movement by means of a fixed guide acting against the conical part of the wound yarn, and instead of making all the bobbins move endwise together as heretofore.

Also when the revolving bobbins in such machines are separately moved endwise by the mechanism shown, connecting each thread of yarn as it runs to a bobbin of the series with the parts which give that bobbin its retreating movement, by means of a device arranged and operated upon by the tension of the winding yarn substantially in the manner set forth, so that whenever a thread of yarn in such case breaks or runs out, the bobbin upon which it was winding at once stops moving endwise, and consequently so that when the yarn is mended, and the winding resumed, the yarn is then laid by the carriers in exactly the proper place on the bobbin without any readjustment of the bobbin by the operative.

Finally, the combination of parts described, whereby the rotary motion of each bobbin is stopped whenever it is slid by the mechanism described to that place in respect to the yarn carriers where the winding should end.

*No. 17,929.—ISAAC HAYDEN, of Lawrence, Mass.—*Improvement in Bobbins for Roving and Slubbing*.—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Making that portion of the barrel of the bobbin which receives and takes up the second layer of roving larger than that part of the barrel which receives and takes up the first layer, substantially as described, to compensate for the thickness of the said first layer, and makes the draft on the roving or stubbing uniform.

No. 16,744. —JONATHAN PARKER, of Biddeford, Maine.—*Improvement in Machinery for Grinding Card Cylinders*.—Patent dated March 3, 1857.—The grinding cylinder D is made considerably shorter than the width of the card cylinder B and doffer C. The grinder D is arranged upon a combined shaft E F, in such manner that the grinder revolves with the shaft E, but at the same time traverses longitudinally. This traverse motion is produced by giving the pulley upon pivot *d'* a little less velocity than the pulley upon pivot *d*, so that the shaft F (provided with a helix groove *i*) slowly revolves within the hollow shaft E.

Claim.—The combination of the stop-motion or mechanism, or the feed mechanism, or that which produces the reciprocating traverse motion of the grinder, as specified.

No. 18,124.—HORATIO N. GAMBRILL and SINGLETON F. BURGEE, of Woodbury, Md.—*Improvement in Carding Engines*.—Patent dated September 1, 1857.—The cotton is fed into the machine by means of feed rollers *a*, and passes to the cylinders B and D, by which it is delivered to the main cylinder C; the cylinders turning in the direction of

the arrows, the cotton being finally stripped by cylinder L from cylinder C, to be further operated upon.

Claim.—Delivering the cotton on to the main cylinder always at two, and sometimes at three different points or places, whilst using but one set of feeding rollers, substantially as described; also, the combination of the working cylinders B D and the working and stripping cylinder E, all running in the same direction, and working in connexion with each other and with the main cylinder, as set forth; the two first B D delivering the cotton to the main cylinder regularly, whilst the latter E is doing so at intervals, substantially as described; also, mixing the strippings taken from the main cylinder by the stripping cylinder E with the cotton on the cylinder D, carding it and returning it thus mixed and carded to the main cylinder, substantially as set forth; also, in combination with the cylinders, the stationary casing M and the concave N for separating the dirt from the cotton, whilst undergoing the carding process, as set forth; also, in contradistinction from giving the variable motion to the cylinder E by cone pulleys and a travelling belt attached to each carding engine, the giving of said motion to a shaft or line of shafting and imparting it from said shafting to the engine by simple belt and pulleys, by which means more certain action is had and at less expense, as set forth.

No. 18,257.—WILLIAM H. WALTON, of Brooklyn, N. Y., and GEORGE H. PHINNEY, of New York, N. Y.—*Improvement in Carding Engines.*—Patent dated September 22, 1857.—The nature of this invention consists in the use of a cylinder brush, arranged with a lever in such a manner as to oscillate to and from the main cylinder, for the purpose of cleaning the same.

In operating this improved machine, a rotary brush H, which is fixed on the lever K, the lever being fixed on the stud I, will oscillate when put in motion by the hand or foot, so that when the teeth of the main cylinder have to be stripped or cleaned, the driving belt that gives motion to the main cylinder, when in operation, is removed to the loose pulley; this being done, the main cylinder will gradually decrease in speed until it stops—but previously to its stopping, when at a low speed, the operator can apply his hand or foot on the lever K, which will raise the brush H against the main cylinder to the depth required in the teeth, and thus clean out the refuse and cotton collected in the teeth of the main cylinder.

The inventors say: We *claim* the application and use of a rotary brush for stripping the main cylinder, in combination with the lever K, or its equivalent, by which the main cylinder is stripped and cleaned when running at the speed given by shifting the driving belt from the driving pulley to the loose pulley, as fully described and shown in the specification, for the purposes set forth.

No. 16,504.—GEORGE WELLMAN, of Lowell, Mass.—*Improvement in Machinery for Stripping the Top Flats of Carding Engines.*—Patent dated January 27, 1857.—The rim of L contains upon one side a full gear, by which motion is communicated to L, whether it be a continuous rotary motion or an intermittent one. The segmental gear gives

an intermittent motion to the pinion M, when it will then stop and be held stationary by its set plate P turning its concave rim upon the face of the set rim Q. The shaft of pinion M has a bearing in one of the stud plates J, the other end of which is supported on the same stud with double cam gear L.

Claim.—First. The arrangement of the segmental gear L with its set rim Q, and the pinion M with its notched plate P, upon the vibrating arm or rocker frame E, substantially as described.

Second. Constructing the segmental gear L with its set rim Q and the lifting and stripping cams in one piece or casting, for the purpose and substantially as described.

Third. The double mangle pin segment or rim, constructed and applied for the purpose and substantially as described.

Fourth. The combination of the pinion M and its notched plate P with the double mangle pin segment, substantially as described.

No. 17,094.—HIRAM HOUGHTON, of Somers, Conn.—*Improvement in Carding Machines.*—Patent dated April 21, 1857.—The card fillet, on the feed rolls B, is secured in such a manner that the teeth will more readily yield without injury to the fillet; and, as it passes on, it is taken and worked by the cylinder D and the roll C, which at the same time strips the feed rolls B, and is taken thence forward, in the usual manner, by the main cylinder A.

Claim.—The combination of the third roll C with the feed rolls and licking, arranged substantially as described for the purpose specified.

No. 18,423.—JOSEPH DAVIS, of East Wilton, N. H., assignor to Himself and ROYAL SOUTHWICK, of Lowell, Mass.—*Improvement in Carding Machines.*—Patent dated October 13, 1857.—In describing the operation of this machine, the inventor says: The operation of the improvement, by adding the cylinders L, consists, first, in receiving all dirt and loose fibres upon their surfaces; and if the dirt is hard and smooth, it will immediately fall off from them, and pass down between them to the floor. If there are fibres or locks of wool which fall upon them, the revolving motion of the cylinders will bring them up to the teeth of the main cylinder A, which will catch them and carry them around to be reworked.

In the drawings, C shows the feed apron; DD the feeding rolls; E the burring cylinder; F the licking; G the workers; H the strippers; and I the brush.

Claim.—The inventor says: In the wool picker, the waste wool, after being raised by the rollers, is immediately thrown out of the machine by the air blast of the picker cylinder; consequently, I do not claim the application of a grate or grid under the main card cylinder.

Nor do I claim applying a series of rollers underneath the main toothed wheel of a wool picker.

But I claim the described combination and arrangement of a series of smooth surface rollers with the main card cylinder and its workers, or its workers and strippers, so as to operate therewith substantially

in manner and for the purpose described, my invention having special reference to a carding machine.

No. 18,787.—HORACE WOODMAN, of Biddeford, Me.—*Improvement in Machinery for Cleaning the Top Cards of Carding Machines*—Patent dated December 1, 1857.—The nature of this invention consists in mechanism, by which the top cards of carding machines are in turn raised, cleaned, and restored to their seats, and the movements of the cleanser frame effected.

The claim and engravings describe the invention.

The inventor says: I do not claim the use of corrugated arches, affixed to the card frame, as a means of moving the cleanser frame, the same having been claimed by me in my former letters patent.

Nor do I claim as new any device or machinery which is substantially described in my former letters patent.

But I *claim*, first, the peculiar construction and arrangement of fixed corrugated arches R and R¹, and traversing corrugated arches G and G¹, with gears L and L¹, operating in the manner and for the purposes specified.

Second, I claim the peculiar construction and arrangement of tangent pinion J, with section of teeth *o o*, and cavities 9 and 10 at its ends, operating in combination with the plane face of gear Y, in the manner and for the purposes specified.

Third, I claim the said jointed lifters, constructed and operated as specified.

No. 16,437.—JOHN GOULDING, of Worcester, Mass.—*Improvement in the Manufacture of Double-pile Carpets and Rugs*.—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The fabric made or woven in the manner described, that is to say: crossing the top ground-warp once only for two shoots of binding-filling, one of which passes through and binds the pile-warps; and crossing the ground-warp of the bottom fabric once only for four shoots of the binding-filling, three of which pass through and bind the pile-warps.

No. 17,954.—LOUIS BOUDREAUX, of Thibodeaux, La.—*Improvement in Cleaning and Carding Moss*.—Patent dated August 4, 1857.—The moss to be cleaned is placed upon the apron K, and is conveyed towards roller F, the teeth of which deliver the moss to cylinder E, which in its turn throws it against the teeth of the vibrating bed H, the teeth of which pass between the teeth of the stationary bed I, combing and cleaning the moss and delivering it at the end of the machine.

The inventor says: It is obvious that my machine may be used for other purposes, such as combing wool, carding cotton, and threshing or separating grain from its straw, &c.; but I do not claim it for any such purpose.

I *claim* the combination of the vibrating bed H with the bed I, and the teeth arranged as described with relation to the cylinder E and roller F, operating in the manner set forth.

No. 16,783.—GEORGE G. BISHOP, of Norwalk, Conn.—*Improvement in the Manufacture of Felt Cloth*.—Patent dated March 10, 1857.

Claim.—In contradistinction from forming a bat for felt cloth, by carding from laps, a bat made from ropings or rovings, carded and formed substantially in the manner described.

No. 17,950.—CHARLES WINSLOW, of Lynn, Mass.—*Improved Elastic Gore Cloth*.—Patent dated August 4, 1857.—Two strips of cloth are cut out in such a manner that their edges will be parallel to the filling *b*, and they are cemented together by a suitable India rubber cement, and the edges *c* of the wider strips are then turned over and cemented down upon the narrower, as represented in figure 2.

The inventor says: I am aware that an elastic cloth has been made as a shirred fabric. This, however, differs essentially from the gore cloth made in accordance with my invention.

I do not claim the peculiar elastic cloth as made with its filling arranged at an acute angle with its warp; nor do I claim the elastic fabric, as made of two layers of such cloth combined.

But I *claim* an elastic band or gore cloth when made not only of a fabric composed of a cement of India rubber or gutta percha, and two pieces of cloth, in which the warp and weft of each piece are made to cross one another diagonally or at acute angles, but with the edges of the cloth cut and overlapped in lines parallel or approximately so to the weft, and at acute angles with the warp threads, and cemented down to the fabric as described.

No. 16,685.—ERNEST GESSNER, of Aue, Saxony.—*Improvement in Gig Mills for Napping Cloth*.—Patent dated February 24, 1857.—P P¹ are two stretching cylinders of the usual construction for stretching the cloth in the direction of its breadth. The cloth is represented by a broken line.

Claim, 1st. The arrangement of the parts of the machine substantially as described, whereby it combines the properties of napping the cloth while it is continually moving over the surface of the napping cylinder, of holding the cloth stretched in the direction of its breadth, of presenting the cloth to the napping cylinder in such manner that the face which receives the nap is exposed to view, and of operating on the cloth at several points of contact at the same time.

2d. The arrangement of the four guide rollers U U U U, so as to be simultaneously adjusted by screws V V¹, or their equivalents, applied to their bearings, substantially as described, to bring the cloth into more or less intimate contact or with a greater or less surface in contact with the napping cylinder.

No. 17,227.—JOHN C. MILLAR, of Starrucca, Pa., and CHARLES N. TYLER, of Washington, D. C.—*Improvement in Machinery for Napping Cloth*.—Patent dated May 5, 1857.—The cloth to be napped passes over the napping cylinders B, and over the teasing disks E, the axes of the latter being set at right angles to the axes of the cylinders B, operating in a line with the weft of the cloth, the cylinders B and disks E raising the nap in two different directions.

Claim.—First, the combination and arrangement of two or more nap-

ping cylinders, in the manner substantially as and for the purposes described.

Second, the teasing disks E, or their equivalents, in combination with the cylinders B, when arranged in the manner and for the purposes substantially as set forth.

Third, the method described of securing the gig rods *a* to the cylinders for the purposes set forth.

No. 18,796.—MILTON D. WHIPPLE, of Charlestown, Mass., assignor to A. B. ELY, of Boston, Mass.—*Improvement in Machine for Shearing Cloth*.—Patent dated December 1, 1857.—In using this invention the piece of goods *a*, figure 1, is run through the machine in the direction of the arrow, whence it is led up over a roll in the customary manner, sufficient tension being kept upon it to keep the surface which is being sheared in contact with the under side of the ledger blades D. As the brush cylinders are revolved in the direction of their arrows they raise the fibre, or nap, of the goods on the surface which is in contact with them, ready for it to be seized and cut off by the knives, which is done by the knife cylinders drawing the fibres between the edge of its knives and the edge of the stationary blade D. The thickness of these ledger blades will regulate the length of the nap, or the closeness to which the goods are to be sheared.

Claim.—Removing the rest E away from beneath the shearing knives, and holding the cloth against the ledger blade by tension, in the manner and for the purpose substantially as set forth.

No. 17,224.—JOHN P. MARSTON, of Charlestown, Massachusetts.—*Improvement in Machines for Turning the Edges of Cloth*.—Patent dated May 5, 1857.—The cloth, as it enters the machine, passes between the roller C and the guide *a*, which turns the edge of the cloth at right angles, and which operation is more perfectly performed by means of guide E and roller I. The edge of the cloth is then bent down to a horizontal position by means of guide H, and pressed down completely by roller L, whence it is discharged from the machine.

Claim.—The combination of the guides *a* and B, roller C, guide E, roller I, guide H, and roller L, substantially in the manner and for the purpose specified.

No. 17,164.—JOHN MARLAND and EARLSWORTH CROCKETT, of Lawrence, Mass.—*Improvement in Cop Tubes*.—Patent dated April 28, 1857.—The material of which these cops are made is a compound formed by incorporating with gutta percha a portion of powdered charcoal. The gutta percha thus prepared is cut in'o fragments of the requisite size, is softened by heat, and the tube is formed by placing one of the fragments in a mould *f*, and causing a plunger *g* to enter said mould.

The inventors say: We do not intend to limit ourselves to the precise method described of forming the tubes.

We lay no claim to the machine upon which the tubes are made, as that forms no part of our invention.

We *claim* a cop tube formed of gutta percha, prepared in the manner substantially as set forth for the purpose specified.

No. 16,694.—JAMES PINE, of Hoosick Falls, N. Y.—*Improvement in Cordage Machines*.—Patent dated February 24, 1857.—The inventor says: I do not claim the use of stretching rollers I I, except when used in a flyer E, as described. Nor do I claim producing friction on the bobbins of the flyers by means of springs applied otherwise than as described.

But I *claim*, first, the additional flyers E, carrying the stretching rollers, arranged relatively to the main flyers S, substantially as described, and deriving motion in the same direction as the said flyers, but at a less velocity, and operating substantially as specified, to stretch the strands after they have received the usual twist, and to impart an additional twist to compensate for the reduction of twist by stretching.

Second. The device for producing a uniform tension on the strands by friction upon the strand bobbins, consisting of the elastic curved lever or combined lever and spring *h j*, attached by a fulcrum pin *i* to the flyer frame, and operating on one head of the bobbin and upon the surface of the outer coil of yarn or strand on the bobbin, substantially as set forth.

No. 16,867.—JAMES P. ARNOLD, of Louisville, Ky.—*Improvement in Cordage Machines*.—Patent dated March 24, 1857.—This invention relates to that class of cordage machines in which two or more strands are twisted in the same machine independently of each other, and then combined by being twisted together to form a cord. The illustrations and claim show the nature of this invention.

The inventor says: I do not claim the nose tube with the conical opening, the outer end of which is circular.

Neither do I claim the movable jaw of the rotary nippers, arranged with lateral guides, on which it slides in a direct line only from and toward the fixed jaw, and is pressed against the fixed jaw by means of a spring; as I am aware that the nose tube and nippers constructed in this manner are found in the cordage machine of Slaughter & Perry, and also in other machines.

But I *claim*, 1st. Flattening the outer end of the nose tube, for the purpose described.

2d. The wedge-shaped opening between the faces of the upper portion of the jaws of the nippers, as described.

3d. Constructing the movable jaw of the rotary nippers so that it can yield in any direction, as described.

No. 17,310.—JAMES P. ARNOLD, of Louisville, Ky.—*Improvement in Cordage Machines*.—Patent dated May 19, 1857.—Motion being imparted to shaft B, the plates C on said shaft are rotated, carrying with them the flyers E, giving to the latter a motion of revolution around shaft B; as the flyers revolve, they are caused to turn uniformly on their own axes by the friction between their bottoms D and the elastic cushion N.

The inventor says: I do not claim giving motion of rotation to the flyers on their own axes by means of a friction band, or by pulleys covered with leather in connexion with a circular track; these being old and well known devices, and referred to as such in this specification.

Neither do I claim the circle or ring composed of a series of segments described in the patent granted to Milton Wallwork, April 7, 1857.

But I *claim* the combination of a series of two or more pulleys, each pulley arranged to rotate on its own axis, and to revolve around a centre common to all, with a ring concentric to said circle of revolution, whose surface, adjacent to the pulleys, is elastic, and forms a track for the pulleys to roll on, substantially in the manner and for the purpose set forth.

No. 16,452.—WILLIAM ROBINSON, assignor to AMENZO W. BEARDSLEY and WILLIAM ROBINSON, of Warren, N. Y.—*Improvement in Laying Tops for Cordage Machines*.—Patent dated January 20, 1857.—The strands are passed through the holes H and grooves N in the cone J; are twisted together at the apex of said cone and passed through tube D, which is screwed on to collar I, so as to produce the required pressure on the strands of the rope; and should the strands differ in size, the largest presses the cone over against the smaller, so as to equalize the pressure and prevent the smaller strands from winding around the larger ones.

Claim.—In laying tops, the use of a movable cone, or its equivalent, so constructed and arranged as to yield to the larger strand or strands, and be pressed by them against the smaller strand or strands, substantially as described for the purposes set forth, whether said movable cone is pressed against the strands by a spring screw or otherwise.

No. 18,454.—JESSE JOHNSON, of Hempstead county, Ark.—*Improvement in Cotton Cleaners*.—Patent dated October 20, 1857.—The nature of this improvement consists in combining the main cylinder or drum N, provided with radiating arms o, to a secondary cylinder T provided with spikes, or teeth similar to a threshing cylinder; the main cylinder working in casing L L, has a perforated bottom, the sides M being formed with radiating ridges, and having concave, sloping, and tapering surfaces I J K. The first or main cylinder is designated as the breaking or threshing cylinder. The secondary or spike cylinder is enclosed beneath a top or casing V, and works over a perforated concave and sloping apron devices S. This combination of cylinders, surfaces, and bottoms form a unity of machine, which performs the functions of threshing and cleaning cotton.

The inventor says: I *claim* the construction and arrangement of the main or beating cylinder N in such a manner as to have the end N^a thereof to work in beds or recesses or depressions as at N^a N^a, formed in the inner surfaces of the sides of the casing, substantially as set forth and for the purpose described.

No. 17,819.—LEWIS S. CHICHESTER, of New York, N. Y., assignor to HENRY G. EVANS, of the same place.—*Improvement in Machines for Cleaning Cotton*.—Patent dated July 14, 1857.—The cotton being placed in hopper B, rotary motion is given to shaft F; the arms *d* draw the cotton through between the rods *a*, and the cotton is thereby divided into small parcels, which pass down the screen D by the shake motion produced by the projections *g*. The parcels of cotton fall upon the rack I, and are subjected to blows by the spring bars *t*, the outer ends of which are depressed by rods J. The spring bars *t* throw the cotton upwards against the screen M, down upon screen H, from whence it falls upon rack J, to receive an additional blow from bars *n*, and is then thrown upwards and deflected down into box B by screen L.

Claim.—The combination of the spring bars *l n*, one or more series operated as shown, the hopper B, rotating picker or arms *d*, shake screens D H, and deflecting screens L M, arranged substantially as and for the purpose set forth.

No. 18,742.—ISAAC HAYDEN, of Lawrence, Mass.—*Improvement in Long Trunks for Cleaning Cotton*.—Patent dated December 1, 1857.—The nature of this invention and improvement, in elongated trunks for cleaning cotton and other purposes, consists in covering the bottom, or partitions on the bottom, with a woven screen which has the scores formed by the warp crossing the weft, or at the junction of the warp and weft, filled with metal or some kind of cement, so as to prevent the fibres of cotton, or other materials being passed over the screen, from catching and hanging in said scores.

Claim.—Covering the partitions of an elongated trunk or box for cleaning cotton and other fibrous substances with woven wire, having the scores formed by the weft crossing the warp of said wire screen filled with metal or cement; the whole combined in the manner and for the purposes set forth.

No. 16,526 —F. A. CALVERT, of Lowell, Mass., and CHARLES G. SARGENT, of Westford, Mass.—*Improvement in Machines for Cleaning Cotton*.—Patent dated February 3, 1857.

Claim.—First. The described arrangement of the cylinders D E and F, the guard G, and the diaphragm L, whereby the motes and dirt removed by the guard G are thrown back upon the first cylinder, in the manner and for the purpose set forth.

Second. The grating P beneath the brush I, which takes the material from off the fine-tooth cylinder when the brush is placed over the cylinder E, whereby the fly is either again carded on to the cylinder F, or is recovered upon the surface of the perforated cylinder R, the dust all passing through this cylinder, in the manner substantially as set forth.

No. 16,870.—ALBERT S. CARLTON, of Clinton, Mass.—*Improvement in Manufacturing Cotton Flannel*.—Patent dated March 24, 1857.—In the engravings, *a* are the warps, *b* the filling threads, which may be twisted or otherwise woven together. As the weaving proceeds, a

heavy soft yarn filling *c* is thrown in upon the surface of the fabric, to which it is tied by passing the warp threads at suitable intervals over it in a manner well known to weavers. Upon the surface of the fabric thus produced a nap is raised in the customary manner by means of the teazles. According to the quality of the cloth required, a greater or less number of the soft yarns *c* may be used in proportion to the number of the foundation filling threads. If a fabric of extra thickness and warmth be required, a soft yarn may be laid upon both the upper and under surfaces of the foundation fabric, and a nap raised on both sides of the cloth.

The inventor says: I do not claim weaving a fabric with two species of fillings; but what I do *claim*, as a new article of manufacture, is the described fabric or cotton flannel having a foundation of hard thread and an extra filling of soft yarn upon one or both sides, from which a nap is raised.

No. 18,410.—JEDEDIAH PRESCOTT, of Rockford, Ill.—*Improvement in Cotton Gin Feeders*.—Patent dated October 13, 1857.—The object of this invention is to supersede the manual feeding of cotton gins, thereby dispensing with an attendant for that purpose, insuring a more regular feed than can be given to the cotton by hand, and also serving, during its operation, to deprive the cotton of dust and dirt before entering the gin-hopper. This invention consists in the employment of an endless toothed apron placed within a suitable box, and used in connexion with a rotary fan stripper and stationary teeth or comb.

In stating what he claims in this improvement, the inventor says: I *claim* the endless toothed apron B, placed in the hopper or box A, in combination with the stripper and fan D¹, and stationary teeth or comb E¹, arranged substantially as and for the purpose set forth.

No. 16,394.—JAMES F. ORR, of Orrville, Ala.—*Improvement in Cotton Gins*.—Patent dated January 13, 1857.—As the saws S rotate, they draw the cotton through between the ribs R, whence it is operated upon by the brushes, whilst the seed drops out through the apertures P, between the upper and lower ribs R and R¹.

Claim.—The combination of the two short ribs R and R¹, the latter arranged in relation to the saw-cylinder substantially as and for the purposes described.

No. 16,488.—EDWARD KEITH, of Bridgewater, Mass.—*Improvement in Cotton Gins*.—Patent dated January 27, 1857.—The nature of this invention will be understood from the claims and the engravings.

Claim.—First. Inclining the upper part of the grates C for the purpose of giving an endwise motion to the roll of unginned cotton in the hopper, substantially as described.

Second. I claim the construction of a brush cylinder, with a chamber or aperture, on the end or head of the same into which a current of air is drawn through an opening in the side of the gin, at a little distance from the axis, and being deflected by the form and direction of the aperture or chamber, as shown by the dotted arrows *e e*, is

finally discharged at the periphery of the brush, near the sides of the gin; thereby preventing any accumulation of cotton at the ends of the brush.

I also claim the peculiar construction of the brush cylinder head, whereby two separate currents of external air are received at the end of the open brush, one of which currents *c c*, being received near the centre in a direction parallel with the axis, is allowed to diffuse itself throughout the interior of the brush, and thus augment its general centrifugal action, while the other current *e e*, being diverted, and finally discharged through openings, more or less contracted, near the ends of the brush, and at right angles with the axis, tends to prevent all accumulation of cotton at the ends of the brush. The entire brush cylinder head being constructed substantially as set forth and described.

Third. I claim setting the rows of bristles in the brush alternately at different angles with the radii of the brush, for the purpose and substantially in the manner described.

Fourth. I claim the improved method of confining the lags or wings in the heads of the cotton gin brush, by means of lips or flanges projecting from the brush head, substantially as described.

Fifth. I claim the introduction of a slight current of air into the flue of the gin, through one or more openings in the mote board or bottom of the flue, for the purpose of facilitating the dropping of the motes or dirt in front or through the mote board, substantially as described.

Sixth. I claim the adjustable screw rods *k k*, in combination with the sliding mote board *D*, and extending outward to the front of the gin near the ginner, substantially as set forth and described.

No. 16,565.—LEWIS S. CHICHESTER, assignor to HENRY G. EVANS, of New York, N. Y.—*Improvement in Cotton Gins*.—Patent dated February 3, 1857.—The feeder-plate *C* has a vibrating or swinging motion on centres *a*, for the purpose of detaching the seeds from the cotton, and also assisting or feeding the cotton to the bite of the rollers. The comb *c* has an endwise lateral motion, together with the swinging motion in common with the feeder-plate. By this means the seeds are rippled out and thrown off from the cotton as fast as the cotton is stripped from them by the action of the rollers and ledge on the feeder-plate.

Claim.—First. The employment or use of the vibrating feeder-plate *C*, having a movement towards and from the bite of the rollers, and provided with the curved ledge *b* at its upper end; the said ledge being serrated or provided with teeth, and placed at or near the bite of the rollers, substantially as described for the purpose set forth.

Second. The feeder-plate *C*, with ledge *b* attached, in combination with the plate or comb *c*; the above parts being arranged and operating conjointly as shown for the purpose described.

No. 17,806.—DANIEL PRATT, of Prattville, Ala.—*Improvement in Cotton Gins*.—Patent dated July 14, 1857.—The cotton is fed into the hopper *E* at its centre, the bottom of the mass resting on strip *l*. As

the saws C rotate, the cotton will be turned by their action, and the cotton in the lower part of the hopper will be moved laterally in both directions from the centre of the box towards its sides, the seeds passing through the passages J while the cotton is drawn between the ribs F.

The inventor says: I do not claim feeding the cotton spirally to the saws, irrespective of the means employed for effecting the purpose.

But I *claim* the ledge e, secured or placed within the hopper or box E, as shown, so as to close the central portion of the lower end of the hopper or box, and cause the cotton, when fed into the box as described, to be fed spirally to the saws from the centre of the box towards each end, for the purpose set forth.

No. 16,699.—JOHN W. WEBB, of Cotton Valley, Ala.—*Improvement in Manufacturing Ribs for Cotton Gins*.—Patent dated February 24, 1857.—The inventor says: I am aware that the whole surface of the rib, or the entire space between A and A, might be chilled; but, in my opinion, they would not be so good, as they would be more likely to break; besides, they would be far more difficult to cast, and it would be far more expensive to finish them than if they were chilled at A A only, as described.

I *claim* the new manufacturing of cotton gin ribs, as described—that is to say, ribs of cast iron, with two places chilled upon them in casting, while the rib is so formed that the ends may be reversed in the same breast of the gin, so that when one chilled part of the rib is worn out, the other may be brought to the working point of the gin saw, and thus effect an important economy in the construction of cotton gins.

No. 17,155.—EDWIN KEITH, of Bridgewater, Mass.—*Improvement in Brushes of Saw Cotton Gins*.—Patent dated April 28, 1857.—The object of this invention is to prevent the entrance of the cotton between the brush heads and the side ceilings B, by which friction is produced to an amount oftentimes sufficient to set fire to the parts.

Claim.—Inclining the heads of the brush cylinder from the periphery towards the centre, and opening the passages a through the heads, in the manner substantially as set forth.

No. 16,833.—ISAAC HAYDEN, of Lawrence, Mass.—*Improvement in Machinery for Cleaning and Separating Cotton, Wool, Fur, and other Fibrous Materials*.—Patent dated March 17, 1857.—The claim and engravings describe the nature of this invention.

Claim.—Increasing the area of the trunk above the screen, or making it larger towards its rear end by increasing its height or width, or both, as may be desirable, so that the blast of air which conveys the materials into or through the trunk will move gradually slower, so as to allow the light and fine, or such portions as are intended to be separated, time to be precipitated and pass through the screen before the air which holds them in suspension escapes from or passes out of the trunk.

Second. And in combination with a trunk made gradually larger towards its rear end, as above claimed, I claim a screen of woven wire or twine arranged upon a series of partitions, as set forth.

No. 17,612.—JOSEPH VICKERSTAFF, of Philadelphia, Pa., assignor to MARTIN LANDENBERGER, of the same place.—*Improvement in Knitted Fabrics*.—Patent dated June 16, 1857.—In operating the needles D and C, each needle produces a plain knitting; and should the needles continue to operate thus, without the position of the thread being altered, two separate and distinct fabrics would be produced; but by interlocking the thread on the needles D C, a fabric is produced as described in the claim.

The inventor says: I do not claim exclusively the production of a knitted fabric ornamented by the transposition of threads of different colors.

But I *claim*, as a new article of manufacture, a fabric knitted with threads of different colors, and composed of two separate thicknesses, interlocked during the process of knitting, at any required intervals, by transposing the threads in such a manner that a knitted fabric may be produced, both sides of which shall present a plain uninterrupted surface of loops, and free from the loose unknitted threads common to other ornamental knitted fabrics.

No. 17,020.—THOMAS B. BUTLER, of Norwalk, Conn.—*Improvement in Machinery for Crossing the Fibres of Wool in Making Felt Cloth*.—Patent dated April 14, 1857.—The wool from the doffer M is seized by the rods G, and carried on to apron O; and as each of the rods M carries the web to the apron, it is moved laterally by the inclination of cams C, and forward towards the next preceding rod by the inclination of the guide plates F, and becomes fixed by the position of the cam as it passes round in contact with the bat and the wool felts upon the bat, and adheres to it. The succeeding rod G, which comes in contact with the wool, commences an opposite lateral and forward throw, and the wool is thus laid on the bat crosswise.

Claim.—The arrangement and use of the regular polygon heads B B, cams C C, guide plates F, and traversing rods G, connected with and operated by the shaft A, substantially in the manner and for the purpose specified.

No. 17,828.—THOMAS B. BUTLER, of Norwalk, Conn.—*Improvement in Machines for Manufacturing Felt Cloth*.—Patent dated July 21, 1857.—When the doffer cylinder A is put in motion, the sliver of fibres passes over the transfer roll B and on to the apron H, as the latter is revolved by drum D; the end of the lever is moved at the same time by cam J, and the rolls B and D are vibrated by it in opposite directions, which deposits the sliver diagonally upon the bat.

The inventor says: I do not claim the trailing of the fibres of wool upon the bat apron diagonally by means of a traversing roll, for that is covered by the patent issued to John H. Bloodgood.

But I *claim* the traversing of the bat apron H, by traversing the apron drum D independently, and in connexion with a traverse of the frame, substantially as described and for the purpose set forth.

I also claim the traverse of the apron H, as described, in combination with a simultaneous opposite traverse of the transfer roll B, as specified.

No. 17,487.—THOMAS B. BUTLER, of Norwalk, Conn.—*Improvement in Machinery for Manufacturing Felt Cloth*.—Patent dated June 9, 1857.—The worm gear I and pins *b* being properly adjusted, when a set of carrier combs *i*², by the revolution of the chains R, has taken a sliver of the weft from the doffer cylinder A across the warp ready to be united with it, the upper projection of one of the pins *b* of the worm gear I arrives in position to move and moves the actuating lever *f*, and that, by its connexion *n*, throws the tripping plates *l* out, so that the tripping pins *i*² on the comb circles *j* come in contact with the cams *y*, and the combs are turned and disengaged from the sliver. When this is effected, the sliver is removed by the descent of the warp, the pin *b* passes by the lever *f*, and the spring *g* returns the lever and tripping plates to their former resting position. When the sliver of weft has arrived across the warp, and is in position to be united with it, the inferior projecting portion of the pin *b*, whose upper portion has arrived in contact with lever *f*, moves the upper end of the pressure rod *d* in beneath cam K; the pressure rod is then depressed by the cam and carries down the lever M, which lifts the shaft L and its cams Z, and thereby the rising frame S, and rolls *e*, and apron T, and elevates the warp of the bat into contact with the sliver of weft at the same instant, when the upper portion of the pin *b* has moved the lever *f* and throws the tripping plates *l* into position, tripped the carrier combs, and disengaged them from it. As soon as this is effected, the pin *b* passes the head of the pressure rod *d*, and is thrown out from beneath the revolving cam by its spring, and the rising frame S falls into its resting position, to be elevated again at the next operation.

The inventor says: I do not claim the frame driving gear B, gears C D E, shaft F, bevel gears G G, shaft H, pinion gears *a a*, chains R, the four carrier combs *i i i i*, comb circle and spring *j*, tripping pins *i*², or the bearings upon the chains for the comb gudgeons—all which are essential parts of the machine as originally invented and patented by John Arnold, on the 15th of July, 1829.

But I *claim*, 1st. The flanged track plates *o o*, arranged substantially as described and for the purposes set forth.

2d. The movable tripping plates *l l*, arranged and operated substantially as described and for the purposes set forth.

3d. The rising frame S and rolls *e e*, operated and graduated substantially as described and for the purposes set forth.

No. 18,487.—DELOS W. GITCHELL and LUTHER W. BADGER, of Matewan, N. Y., assigns to the SEAMLESS GARMENT MANUFACTURING COMPANY.—*Improvement in Manufacturing Seamless Felt Garments*.—Patent dated October 20, 1857.—In the engravings, figs. 1 2 and 3, represent the component parts of a coat in a proper state for being united to each other, and fig. 4 is a section in the line *x x* of fig. 3. Fig. 5 represents a garment in a proper state to be operated upon by the "jigger" or hardener. 6 shows the same garment after it has passed through the required hardening and fulling operations. The edges *a b*, in fig. 1, are scratched or bevelled off on the outer side, and the edges *c d e* are scratched or bevelled off on the inner side. The claim will complete the explanation of the nature of this invention.

The inventor says: I *claim*, first, cutting the original portion or portions of a seamless article of clothing from a hardened bat, and then so perfectly uniting the edges of the said portion or portions with each by felting, that the articles thus formed will be of uniform thickness in every part, and will be of so tenacious a texture that they will retain their original shape during the ultimate condensing operation of the fulling mill, all substantially as set forth.

No. 16,431.—JOHN H. BLOODGOOD, of New York, N. Y.—*Improvement in Machines for Forming Bats for Felting*.—Patent dated January 20, 1857.—In this machine the web passes over cylinder B, under roller C, over roller A, and then between rollers A and T, and under the latter on to the endless apron M. As these rollers rotate, a lengthwise motion is imparted to roller A by means of levers S operated by a crank, and this lengthwise motion produces a crossing of the fibres on the bats.

Claim.—The combination of the rollers B and C with the vibrating drum A, in the manner and for the purpose described.

Also, the combination of the rollers B and C with the vibrating drum A and the roller T, substantially in the manner and for the purpose specified.

No. 17,420.—FRANCIS BURKE, of Woodlands, Montserrat, British West Indies.—*Improvement in Machinery for Preparing the Fibre of Banana, Plantain, Aloe, &c.*—Patent dated June 2, 1857; patented in England July 14, 1855.—The material to be operated upon is fed on to the apron *d* between the rollers *c* and *c*¹, and, passing under the beating cylinder A, it is acted upon by the teeth *b* of said cylinder, the apron *d* at that place being supported by a yielding table *f*, which, turning on fulcrum *k*, is pressed upwards by a weight *h*; the material, when acted upon by teeth *b*, passes out on apron *d*, and is discharged from the machine.

The inventor says: I do not claim any of the parts of the machine, separately.

But I *claim* the combination of the beating cylinder with the endless apron or yielding table, or surface under the apron, substantially as explained.

No. 18,204.—JULIUS A. JILLSON, of Poughkeepsie, N. Y., and HENRY WHINFIELD, of New York, N. Y.—*Improved Method of Treating Fibrous and Textile Substances in a Vacuum for Cleansing Purposes*.—Patent dated September 15, 1857.—The articles to be cleansed are placed in the receiver E, and the cleansing fluid being forced into the lower part of the receiver A, it is heated by furnace G. The air is then exhausted from receiver E, and the fluid is forced by pump I up through strainer D, and through the articles in receiver E, and repasses through pump I to the lower part of receiver A, to be forced up again through receiver E.

Claim—The process of treating fibrous and textile substances in a permanent vacuum for extracting coloring, grease, or other foreign matters, substantially as set forth.

No. 16,865.—MILTON D. WHIPPLE, of Charlestown, Mass., assignor to ALFRED B. ELY, of Boston, Mass.—*Improvement in Machines for Combing Fibrous Materials*.—Patent dated March 17, 1857.—After the material is placed upon the combing cylinder E, by which the fibres are disentangled and straightened out, they are then drawn out from the comb teeth as follows: I I are rolls revolving in stationary bearings, and carrying the apron P; K is a weighted roll, which operates with the roll I to draw the fibres from the teeth *f* at the point where the rolls operate; the teeth pass beneath the guards *b b*, which prevent the noil, knobs, and uncombed cotton from being drawn off with the straightened fibres. The separate slivers are thus led off by the apron P, and are united into a sliver R by the funnel M, which delivers it to the calender rolls N.

Claim.—Inclining the comb teeth to the axis of the cylinder, and covering them with the guard at the point of draught, in the manner substantially as set forth for the purpose specified.

No. 16,838.—JOHN HOWARTH, of Salem, Mass.—*Improved Method of Cleaning Fibrous Materials*.—Patent dated March 17, 1857.—The inventor, in describing his improvement, says: Sixty pounds of oil-soap and fifty pounds of crude soda ash, or thereabouts, are dissolved in two hundred gallons of water; the mixture is then warmed to about 180° Fahrenheit. These proportions may be varied according as the material is more or less dirty or saturated with oil. Suppose the material to be operated upon to be dirty, oily cotton waste; upon one hundred pounds of this material pour fourteen gallons of the above mixture, or a sufficient quantity to saturate the waste without excess, the strength of the solution being such that the soda which it contains shall be just sufficient to saponify the grease in the waste. After soaking about thirty minutes, the whole is removed to a fulling mill, which is allowed to act upon it as in the process of fulling woollen goods, the material being prepared in parcels just sufficient to charge the mill once. The whole is removed to a powerful press, and the liquid and soap, including that formed upon the soda employed, and the oil in the materials, are expressed. It is again submitted to the action of the fulling mill and cold water, after which it is pressed once more, when it is cleansed and ready for use.

Claim.—The described process of cleansing fibrous materials, as set forth.

No. 18,888.—JAMES APERLY and WILLIAM CLISSOLD, of Dudbridge, England.—*Improvement in Machinery for Preparing Fibrous Substances for Spinning*.—Patent dated December 22, 1857.—The sliver or roping having been threaded through the eye of the travelling feeder, and passed into the bite of roller *g g*, and rotary motion having been imparted to the band *k* through the bevel gearing, the feeder *f* will be driven along the rod *e* by the stop-pin *i*, which plays up and down in the vertical slot of the feeder; and the rollers *g g*, running over the face of the frame *d*, will be caused to rotate and deliver the sliver in parallel lines over the feeding bands. As the feeder *f* arrives at the position indicated by the lines at *f*¹, it will

raise the lever *m*, and disengage it from the sliver, and it will then strike against the stop *g*, and give the rod *e* an endway motion to the left hand. This movement will bring the finger *n* into the dotted position, where it will rest against the lever *m*¹. On the return movement of the feeder *f*, it will have a fresh lap of sliver on the end of the lever *m*, and, passing forward, will raise the lever *m*¹ clear of the sliver. The finger *n* will then turn in the end of the sliver, and at the next movement it will be moved back out of action by the feeder first lifting a hinged catch *t*, and then striking the stop *p*, and sliding the rod *e* in its bearings.

Claim.—The means described for conducting the roping or sliver from one preparing machine to the other, and laying the roping or sliver in parallel lines on the feed-bands, aprons, or tables of preparing machines.

No. 18,801.—JOHN WATSON BURTON, of Eye, and GEORGE PYE, of Ipswich, England.—*Improvement in Mode of Treating Flax, Hemp, and other Fibrous Material.*—Patent dated December 8, 1857.—This invention consists of treating the fibrous parts of flax, hemp, or other fibrous matter requiring like treatment, after being separated from the boon or woody matter, or without having first separated the woody matter or boon, by subjecting the same to the action of water impregnated or combined with fullers' earth and with steam, and then boiling the fibrous matters. During the process of boiling the fibres, they are to be alternately closely pressed together, and allowed to expand, from time to time.

In the engravings representing the machinery used in this invention, *f f* are pressing rollers, between which the moist flax, hemp, or other similar fibres, are to be run after they have undergone the process above described; *g g* are three pairs of crimping rollers; *h h* are two or more pressing rollers, to take out the impressions of the crimping rollers. The fibres are laid on an endless belt *k*, and after being seized by the rollers *f f*, pass from thence to and between the other rollers, whereby, before they leave the machine, they will have been pressed, crimped, and again pressed.

The inventors say: We do not claim merely heating or boiling fibre in water.

But we *claim* the described mode of treating flax or fibrous matters requiring like treatment, the same consisting in subjecting such as described to the action of a press, and to water impregnated with fullers' earth, and heated or boiled.

No. 16,977.—WILLIAM J. HORSTMAN, of Philadelphia, Pa.—*Improvement in Machines for Cutting Fringes.*—Patent dated April 7, 1857.—The fringe is fed in at the point *G*, towards the circular shears *E F*, by means of the feed rollers *H* and *I*, which take hold of and expand the fringe by means of the pins on their circumferences and pass it between the shears *E F*, so as to slit down the middle thereof and to form two fringes.

Claim.—The combination of the circular cutters, and the feeding-rollers *H* and *I*, arranged and operating substantially as described.

No. 16,543.—WASHINGTON G. HAGAMAN, of Philadelphia, Pennsylvania.—*Improvement in Machines for Forming Felt Hat Bats*.—Patent dated February 3, 1857.—The picker W blows the material as it comes from the feed rollers Q through aperture A¹, and is attached to the surface of rotary sieve I in consequence of the partial vacuum formed underneath said sieve by means of a fan E. The deflector B is of a flexible material, and by expanding or contracting it, the resisting surface which it presents to the attraction of the material to the centre of the sieve may be increased or diminished, for the purpose of forming a flat circular bat of equal and uniform compactness at all distances from the centre.

The inventor says: I do not claim the removal of the bat from the surface on which it is formed before hardening, such having been done by A. Rankin, as shown in his patent of October 3, 1854.

Nor do I claim the mere employment of a flat surface on which to form the bat.

But I *claim* the combination of the flat rotary sieve I with the deflector B, arranged and operating substantially as and for the purposes set forth.

No. 17,083.—WILLIAM A. FENN, of New Milford, Connecticut.—*Improvement in Machines for Blocking Hat Bodies*.—Patent dated April 21, 1857.—The hat body N is taken as received from the felting machine, and its edge secured between the jaws *b d* of the bars D E¹, which jaws are kept together by pressing down the outer end of treadle O, the inner end of which passes underneath the spring J. The spindle H is then raised by depressing the outer end of treadle I, and the hat block M is forced up within the hat body N. The rods *k* are then turned on their joint *j* and brought over the hat block and body, and are passed down to a point below block M, and the rods are closed, the curved portions serving as jaws, and drawing the body snugly around the hat block, as represented in fig. 3.

Claim.—The cylinder *g*, placed loosely on the spindle or arbor H, and resting on the spring *h*, in combination with the rods or jaws K K; the above parts being arranged substantially as described, whereby the hat body may be stretched and adjusted snugly around the hat block.

No. 16,823.—JAMES B. BLAKSLÉE, of Newtown, Connecticut, and E. R. BARNES, of Brookfield, Connecticut.—*Improvement in Machinery for Felting Hat Bodies*.—Patent dated March 17, 1857.—The forked lever is so arranged that at each revolution of the cam L the clutch G is thrown into gear twice, thus giving two intervals of motion and rest to the rotating bed.

Claim.—Giving to the endless rotating bed of felting machines periods of rest during the continuous motion of the upper deck, substantially as described.

No. 16,973.—WILLIAM FUZZARD, of Cambridgeport, Massachusetts.—*Improvement in Machines for Felting Hat Bodies*.—Patent dated April 7, 1857.—A reciprocating rotating motion being imparted to drum B, said motion is transmitted to the article F to be felted, which lies

within the endless cloth C; and the corrugated roller G, attached to the swinging frame D, exerts a pressure upon said felt similar to that produced by the hand when felted by manual labor.

Claim.—The employment or use of the roller G, one or more attached or applied to the machine, substantially as shown and described for the purposes specified.

No. 17,115.—HENRY L. RANDALL, of Roxbury, Connecticut.—*Improvement in Machines for Felting Hat Bodies.*—Patent dated April 21, 1857.—Motion being imparted to the crank pulley *r*, a vibrating motion is given to the levers F E and P; and the felting board M, attached to lever P, is caused to work the material N, which revolves with the rollers R. The stock O, which supports the rollers R, can be adjusted to any desired height by a pinion acting on rack V, it being retained in its position by pawl and ratchet c.

Claim.—1st. The rising and falling and forward and back motions of the felting board by a system of levers, arranged as described, or their equivalent.

2d. Rotating the bat or roll of material being felted round its own axis, in the manner substantially as described.

3d. In combination with the felting board, when operated as described, the adjustable stationary stocks or carriages for holding the roll or bat, substantially as set forth.

No. 18,316.—ALONZO C. ARNOLD, of Norwalk, Conn.—*Improvement in Machines for Forming and Hardening Hat Bodies.*—Patent dated October 6, 1857.—This invention, says the inventor, has two distinguishing features; the first relates to the formation of the bat, or body of the hat, and the second to the method of hardening it. The first consists in the adaptation of different portions of a perforated cone, situated over an exhaust, successively to an ordinary but concentrated blast of air created by a picker, or cylinder, in which the fibres of fur are suspended, so that although the fur is blown against a portion of the cone only, still it is, by an adjustable, alternating, vertical and positive motion of the cone, deposited over the entire surface, and with precisely such variations as to quantity on given portions of the cone as may be required to make a perfect hat, or the manufacturer may desire. This is effected by adding to the picking machine and exhaust box in common use a revolving adjustable heart-shaped cam, and a lever, and sundry incidental and auxiliary parts, by means of which the cone receives a graduated, vertical, alternating motion during the formation of the bat for the hat, accelerated or retarded by the form of the cam, on the application of a hand lever, so as to increase or diminish the quantity of fur deposited upon particular portions of the surface of the cone, as desired.

The second feature consists in the arrangement of the several devices employed in the process of hardening a hat.

The above results are effected by applying the outer cone as soon as sufficient fur is deposited on the inner one, locking the two together, and placing them in an inverted, perforated cone or disk, and there subjecting them to a rapid revolving motion and jets of steam from a pipe, having numerous apertures, extending into the disk.

Claim.—The inventor says: I do not claim the picking machine and feeding appendages or chamber, nor the exhaust box, nor fan, nor any of the movements for driving either, or revolving the cone, nor the method of forming a hat by their use.

But I *claim* the cam shaft I, worm-wheel L, cam J, levers U U¹, step e, cylinders b, and collar a, or their mechanical equivalents, arranged and operated substantially as described, and for the purposes set forth.

I further claim the shaft R, lever V, pulleys S and T, the inverted cone or disk m, brackets p p, shaft n, pulley o, sleeve r, shaft q, lever x, lifting rod y, or their mechanical equivalents, arranged and operated substantially as described, and for the purposes specified.

No. 16,426.—IRA GILL, of Walpole, Mass., assignor to Himself and ELLBRIDGE BROWN, of Malden, Mass.,—*Improvement in Machines for Forming Hat Bodies.*—Patent dated January 13, 1857.—The fur is carried to the machine on the feeding apron B, and passes between rollers D and E, where, by the action of the toothed cylinders F and G, it is thrown up in the trunk H, whence it passes to the top of box I; the fans T create a blast in the direction of their respective arrows, drawing the air and fur in the box I downwards; and as this current of air passes through the apertures in cone N, the fur is deposited on said cone. The current of air can be regulated by means of the registers S, which revolve with cone N, the lower one of which can be turned on shaft R, and serves to open or close the apertures of the upper disk, so as to produce a current of air of the desired strength.

Claim.—I *claim* the forming of a hat body, within an enclosed chamber, in which a vortex is produced by means substantially such as described; said chamber diminishing in area from its open to its close end, to regulate the draft through it, and to avoid counter currents, eddies, or dead space, as set forth.

Also, in combination with the cone on which the hat body is formed, a register, or draft regulator within it, so as to regulate the quantity of fur, or other material, that is to be gathered upon its upper and lower portions, as set forth.

No. 18,181.—JOSEPH BOOTH, of Newark, N. J.—*Improvement in Machines for Hardening Hat Bodies.*—Patent dated September 15, 1857.—As the spindle F is revolved with great rapidity, and as the cradle A is held excentrically thereto by crank pin b, and is also prevented from turning on its axis, it receives a continuous rapid tremulous motion, which has the effect of causing the inner cone N to revolve in a direction opposite to that of the spindle F, while the outer cone a is prevented from turning by its friction against the cradle A, whereby the inner cone carries the hat round with it, causing the latter to move slightly and rub upon the exterior cone.

Claim.—A hardening machine, operating substantially as set forth, and consisting substantially of a cradle and of a rapidly revolving spindle, upon which the cradle is supported excentrically.

No. 18,034.—JOSEPH BOOTH, of Newark, N. J.—*Improvement in Machinery for Manufacturing Hat Bodies*.—Patent dated August 25, 1857.—A quantity of fur being placed upon apron D, it is carried towards the feeding rollers *e e'*, which seize it and carry it towards the picker A, the teeth of which operate upon the fur, throw it up into box G, whence the fine particles fall upon apron F, and are carried between feed rollers *i i'* to the second picker B, whilst the coarser particles fall down into box I, through space *h*. The fur collects upon the hurdle K, by reason of the draught created from below by means of fan J, and the fur is formed to a bat on said hurdle; and when it has acquired a sufficient thickness, it is removed therefrom for further operations.

Claim.—The rotating flat hurdle, having its perforated surface divided substantially as set forth, in combination with a picking or bowing apparatus and air-exhausting apparatus; the whole constructed and operating substantially as set forth.

Also, the arrangement of the fan shaft upon the spindle of the revolving hurdle, substantially in the manner and for the purpose set forth.

No. 16,338.—EVAN MORRIS, Philadelphia, Pa.—*Improvement in Hats*.—Patent dated January 6, 1857.—The cutting of the band, as described in the claim, is represented in the engraving by the lines 1, 2, 3, 4, 5.

Claim.—Cutting or slotting the band of a hat, as set forth, to make that part of it soft and yielding to the head, whilst, at the same time, it is made to retain the requisite stiffness and support to give it durability, as set forth.

No. 17,033.—WILLIAM A. FENN, of New Milford, Conn.—*Improvement in Machines for Forming the Brims of Felt Hats*.—Patent dated April 14, 1857.—The hat body being stretched over block O, motion is given to the lower shaft *b'*, and the rollers *d e* rotate the hat body P and block O. The lever E has a vibrating motion given it by the cam J, and the segment M as well as the rollers *d e* have a continuous rotary motion. Each time the end of lever E is depressed the brim of body P is clamped between the end of lever E and the bed *m*, and the movement of the brim is checked for an instant; and, as the rollers *d e* have a constant movement, it follows that the brim is not only rotated by the rollers, but also stretched circumferentially, the stretching operation being intermittent in its action. The serrated segment M, with the plate *s* attached, stretches the brim in a radial direction.

Claim.—The employment or use of the rollers *d e*, vibrating bar E, working over the bed *m*, and the serrated segment M, with plate *s* attached, arranged and operating conjointly as shown for the purpose set forth.

Further, in combination with the rollers *d e*, segment M, and clamp formed of the lever E and bed *m*, the adjustable frame C, which receives the block O, the frame C being fitted within the frame B, as shown and described.

No. 16,588.—ALVIN HURD, of Danbury, Conn.—*Improved Method of Surfacing Felt Hats*.—Patent dated February 10, 1857.—The inventor provides the hat block C with an elastic cover *h*, over which the hat F is worked. The elastic cover is to compensate for the uneven thickness of the felt, the thicker portions settling into the elastic cover, and thus presenting an even surface to the action of the stone.

Claim.—Surfacing the hat upon the elastic cover or bed for the purpose and in the manner substantially as described.

No. 17,318.—GEORGE CROMWELL, 2d, of Milford, Conn.—*Improvement in the Method of Treating Straw Braid for Hats, &c.*—Patent dated May 19, 1857.—The braid is passed between the rollers C and D by turning crank G, and, as the rollers are of conical form, the edge of the braid nearest the larger ends of the rollers will be compressed more than the opposite edge, and thus bevelled, and the braid will consequently be curved in a circular form.

The inventor says: I am aware that it is common to smooth braid by passing it between plain rollers. I do not claim such rollers, nor do I claim broadly the employment of conical rollers for curving materials of all descriptions, since they have been heretofore used. An example is seen in E. Caiver's patent (1838) for making circular saws. But I *claim* the method of simultaneously bevelling, curving, stretching, and smoothing the braid, as described.

No. 16,365.—SAMUEL H. LITTLE, of St. Louis, Mo.—*Improvement in Hemp-Brakes*.—Patent dated January 6, 1857.—The hemp stalks pass from the endless feeding apron A, between the feeding rollers C and C', where they are crushed, and pass thence between the throat bars D to the beaters *g*, on the reciprocating gate E, whence the broken and crushed material passes to shoe F, which shakes the wood from the crushed hemp, and allows it to drop through the slatted top and bottom, whilst the clean hemp is drawn out by rollers G and G', and deposited on apron H.

The inventor says: I am aware that the throat through which the hemp passes to be acted upon by the beaters has been so arranged that it could be placed at different distances from a throat formed of beating bars secured in an oscillating frame, and therefore I do not wish to be understood as claiming said arrangement.

I *claim* placing the feeding rollers C C' and the throat bars D D in one and the same movable frame, for the purpose of enabling said frame to be so adjusted as to give any desired space between said throat bars and the beating bars of the reciprocating gate, without varying the distance between said feeding rollers and the throat bars D D, substantially as set forth.

I also claim the securing of the throat bars D D within their supporting frame in such a manner that they can be so adjusted as to form a wider or a narrower opening between them, for the purpose of adapting the said throat opening to the reception of hemp stalks of different sizes; but this I only claim when the said throat bar supporting frame is so arranged in relation to the supporting frame of the reciprocating gate that their distance from each other can be so adjusted that the action of the beaters will be exactly adapted to the

size, quantity, and condition of the hemp stalks fed through said throat, substantially as set forth.

I do not claim an oscillating grating, used as a whipper, in machines for breaking hemp; for such, I learn, is involved in an interference now pending between the applications of S. A. Clemens and C. Simon before the Patent Office. And I am also aware that it has been proposed to rigidly combine a shaking shoe with an oscillating throat bar frame, and therefore I do not claim said combination.

I claim the combination of the shaking shoe F with the reciprocating gate E, when they are arranged substantially as set forth.

No. 17,015.—JAMES BARKLEY, of St. Louis, Mo.—*Improvement in Hemp-Brakes*.—Patent dated April 7, 1857.—The operation of this machine is as follows: Rotary motion is communicated to conical pulley B, which, by means of belt J, communicates rotary motion to pulley B', also to cam disk C and cam D; the latter, in revolving, comes in contact with the anti-friction roller *f* in the end of bar N, which, by its connexion with rock shaft K, in conjunction with coiled spring O, imparts vibratory motion to breakers M. When the operation is first commenced, the operator stands on platform F, near shaft G; on receding from shaft G, platform F is pressed down into the dotted position, turning crank *i*, and bringing pin *h* and swords M in the dotted positions where the stroke of the latter is shortened; at the same time lever I moves belt T into the dotted position, thereby increasing the speed of the swords M.

The inventor says: I do not claim any single member of my machine as such. Neither am I unaware that a mode of shifting the speed and stroke in similar machines by hand levers has been used, for such is seen in the patent of M. Thompson, of August 5, 1856. But I *claim* the hinged platform, arranged as described, in combination with the mechanism substantially as set forth, and so that the attendant upon the platform may change the speed and stroke by merely changing his position, and thus leave his hands at liberty to manage the hemp.

No. 17,092.—WADE W. HAMPTON, of Winchester, Va.—*Improvement in Hemp Brakes*.—Patent dated April 21, 1857.—The operation of this machine is as follows: The hanks of hemp are inserted between the distended jaws *b*, *c*, then, by turning pulleys H, the jaws *c* are turned on their pivots and closed upon jaws *b*. The operator then turns pulley V, which causes pulley F and roller B to turn; by which means the bar E, brackets G, and clamps *b* are gradually lowered. The hemp to be broken now enters the four openings *z*, and passes down within the bent irons *m*, which thus prevent the hemp from being scattered during the operation of breaking. Motion being imparted to crank pulley M, the beam L is oscillated on its pivot at a rapid speed, striking alternately against the sides of frame A, and the material is broken by the operation of bars *o* and *p*, which are brought alternately into such positions as represented in fig. 3. The

bar E is lowered until the shanks x of the pawls h come in contact with the table K, which movement forces the jaws c d asunder, causing them to release the hemp. Just before the jaws are tripped the operator pulls lever Q, so as to bring rollers s against rollers t , which rollers now take hold of the material and thus prevent it from dropping. The end of the hemp is now passed around the circumference of the pulleys U, and fastened to them by means of the hinged clamps u ; and as the shafts S are rotated, the pulleys and clamps take hold of the hemp, drawing it through the breakers and discharging it from the machine.

Claim.—Clamping and feeding the clamped material through between the breakers, when accomplished by an arrangement of parts substantially such as set forth.

No. 17,274.—J. LOCKE HARDEMAN, of Arrow Rock, Missouri.—*Improvement in Hemp Brakes.*—Patent dated May 12, 1857.—The hemp I is placed transversely on the front or wider end of the bars g , and motion being given to the driving wheel H, the cranks a impart a curvilinear movement to the bars c e , and the latter are brought simultaneously towards and from each other, and the hemp is broken between said bars.

The inventor says: I do not claim broadly the invention of reciprocating slatted platforms for breaking hemp, for I am aware that they are old; an example may be seen in Walker's patent, May 27, 1851.

Nor do I claim giving a curvilinear movement to the beds of printing presses, as seen in T. H. Dodge's patent, November 18, 1851. In this example the printing beds have a curvilinear movement imparted to them similar to that given to my platforms, and by analogous means.

I do not claim this mechanical movement; but to the best of my knowledge and belief the combination of a pair of slatted platforms c e , each of which has a curvilinear motion, with an intermediate stationary platform g , as set forth, is a new feature in hemp brakes, constitutes a new combination, and is productive of useful results.

I claim the employment, in combination with a stationary platform composed of bars g , of a pair of curvilinear moving platforms, composed of bars c e , as and for the purposes set forth.

No. 17,900.—STEPHEN STAFFORD, of Carroll county, Missouri.—*Improvement in Hemp Brakes.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I claim, first, arranging a series of swords in a sash at unequal distances apart and parallel to each other, the spaces between them decreasing from the upper to the lower sword of the series, for the purpose described.

Second, arranging a series of swords in a sash, so that the edges of the under sword will project beyond the edge of the sword next above it throughout the entire series, for the purpose described.

Third, the combination of the swords a in the stationary sash with those b in the movable sash, when arranged respectively in each sash, in the manner described.

No. 18,303.—CONRAD SIMON, of Louisville, Kentucky.—*Improvement in Hemp Brakes*.—Patent dated September 29, 1857.—In this improvement there is combined with a table and mouth-piece a pair of receiving, feeding, or breaking rollers, which is thus described by the inventor: The table or mouth-piece *a* is securely mounted on a frame B. This mouth-piece consists of two plates extending from side to side of the machine, nearly about the length of the rollers, and sufficiently far apart to admit the hemp or flax to pass between them to the receiving or breaking rollers, as is shown in figures 2 and 3, where it is shown in two positions, with the stalks passing through the mouth-piece and breaking rollers *c c*, which are mounted in a gate or frame D D, and pass up and down, or at right angles, to feed in front of said mouth-piece, and at such a distance off as will rub or break the stalks. The said rollers are geared together, and revolve in the direction of the arrows, and are moved, or made to revolve, by the ratchets *e e*. These rollers revolve while they are moving up or down. The function of the rollers will be readily understood by reference to figures 2 and 3.

Claim.—The inventor says: I claim the combination of the breaking rollers *c c* with the mouth-piece *a*, arranged and operating in the manner described, for the purpose specified.

I do not claim broadly the rollers or mouth-piece as such; for they have been in use, and are well known in other machines for other purposes.

No. 18,657 —GEORGE F. S. ZIMMERMAN and ARMSTRONG BEATTIE, of St. Joseph, Missouri.—*Improvement in Hemp Brakes*.—Patent dated November 17, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The inventors say: We do not claim, separately or in itself considered, either of the parts shown and described.

Nor do we claim the broad idea of operating upon both sides of the hemp simultaneously, for this is seen in the device of F. P. Holcomb, patented March 13, 1847, where the hemp is carried in between a pair of rollers, the teeth of which mesh together.

But we claim the arrangement and operation of the rollers C C, scutching rollers D D, and breaking cylinder B, as set forth, whereby the hemp is stretched between the feed rollers and breaking cylinder, and also between the latter and the scutching rollers, the material, while thus stretched, being acted upon by the breaking cylinder B and the scutching rollers D D, all as described.

No. 18,638.—JOHN L. HARDEMAN, of Arrow Rock, Mo.—*Improved Hemp Cutter*.—Patent dated November 17, 1857.—The engravings and claim show the nature of this invention.

The inventor says: I *claim* first, the hinged trailing hemp platforms approximating in form to a right angle triangle, and made with an inclined elevation *c d* and guard *e*, and arranged in rear of the cutter-beam on both sides of the machine, in such a manner that a broad central space shall be left for the cut hemp to be laid in, out of the way of the team and the body of the machine, by said platforms, as and for the purposes set forth.

Second. The employment of the peculiarly constructed hemp trailing platform J, in combination with the inwardly inclined bevelled directing board H, arranged just above the trailing platform, for the purpose of directing the hemp angularly upon the platform, as described.

Third. The employment of a reel having its blades bent spirally at one end to the axle or shaft, in combination with the inwardly inclining direction board or boards and trailing platform or platforms, as and for the purposes set forth.

No. 17,795.—SAMUEL LOWNDS, of Brooklyn, N. Y.—*Improvement in Hemp Drawing Machines*.—Patent dated July 14, 1857.—The endless chain of combs *a* all travel on the top side towards the drawing rollers A B, which travel at a greater speed than the chain does; consequently the hemp is pulled through the teeth although those teeth are travelling in the same direction, and thus the sliver is formed.

Claim.—The arrangement of a hemp-drawing frame, having its gills operated by guide dogs upon both sides of the frame, and attached to each alternate row of gills, substantially as described.

No. 16,375.—ENOCH COLVIN, of Poultney, Vt.—*Improvement in Knitting Machines*.—Patent dated January 13, 1857.—The yarn is carried to the needles by means of guide *h*, which is pivoted to the arm *i*; the double circle *a* of needles is carried around by two feeders *e f*, the upper ends of which are operated by the grooved cams *g*. These cams are so constructed that the feeders approach one another or recede together; as soon as a stitch is made, they open, and a curve in the groove of the cam throws them to the left to the distance of one needle from another; they are then directly brought together again, and clasp the double circle of needles, when another curve in the groove moves them to the right, carrying the circle along with them and bringing forward another needle.

The inventor says: Machines are already in use in which a single circle of needles are employed for knitting plain work with machinery similar, in some respects, to that described; and I make no claim to any part of such machinery.

But I *claim*, first, the use of two circles of needles, as described, for knitting a ribbed fabric.

Second. The method of moving the feeders, as described, by means of grooved eccentrics, with curves in the grooves.

No. 18,725.—WALTER AIKEN, of Franklin, N. H.—*Improvement in Knitting Machines*.—Patent dated December 1, 1857.—A is the body or frame of the machine; B is the needle bar on which the needles move, and is fastened to frame A by screws P P; C is the cap which confines the needles in bar B, and is held down by the screws R R; D is the sliding bar which gives motion to the needles H H H. The bar D runs in the boxes E E. G is a bar, holding plates L between the needles, for the purpose of keeping back the knit fabric, and to assist in throwing off the old loops from the needles and in forming

new ones, and is secured to the frame by means of screws S S; I is the yarn carrier, attached to the bar D by means of the pivot screw J; F is the rocker bar, attached to the frame by the pivot screws T T, on which it turns; N is a spring, catching into the pin M, for the purpose of holding up the bar F.

The inventor says: I do not claim the plates L between the needles, when fastened to a movable bar, as shown and described in John Nesmith's patent of July 29, 1856.

Neither do I claim a rocker bar, when made and arranged as described in the patent of Nesmith, but only when constructed and arranged as hereafter claimed.

I claim a set or series of traversing needles, arranged to slide independently of each other, in combination with the stationary plates K, between the needles, to hold the fabric knit when the stitches are formed, constructed, and operating as described.

I claim a vibrating traversing yarn carrier, operated so as to hold the yarn over or near the selvage while the carrier is vibrated so as to change the latch opener, as described.

I claim a double-edged latch opener, in combination with a vibrating yarn carrier, operated so as to change the latch opener, as described.

I claim the stationary rocker or supporting bar F, so constructed and arranged as to support the outer ends of the needles beyond the fabric and under the latch opener, as described.

No. 18,792.—SHERMAN D. FAIRBANKS, of Cohoes, N. Y., assignor to Himself and CHARLES H. ADAMS, of Cohoes, N. Y.—*Improvement in Knitting Machines*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim a latch regulator, with a point to pass under the latches after they are closed, such as is described and represented in the patent granted to Jonas B. and Herrick Aiken, May 22, 1855; neither do I claim a yarn carrier, in combination with a latch regulator, as described in said patent. But what I do claim is a latch interceptor, consisting of a bar or arm, arranged in such a position over the needles as to intercept the latches after they are opened or thrown back by the stitches of the fabric knit, and hold them open until the yarn is supplied to form new stitches, and then allow them to be closed again, substantially as described.

I also claim, in combination with the above described interceptor, the yarn carrier *f*, for the purpose of delivering the yarn, substantially as set forth in the specification.

No. 18,121.—WILLIAM MATTISON, of Northbridge, Mass., assignor to JOHN C. WHITIN, of same place.—*Improvement in Condensers for List Speeders*.—Patent dated September 1, 1857.—The roving A passes through guide P, between the upper and lower part of the belt P¹, under the layer G, the bonnet G¹ keeping the self-adjusting condenser F¹ in place, by which the roving is uniformly condensed when the belts P¹ should wear off.

Claim.—The self-adjusting weight or condenser F¹, applied in the manner described, and retained in its position by the casing or bonnet

G, or its equivalent, substantially as described for the purpose specified.

No. 16,415.—WILLIAM WEILD, of Manchester, Great Britain.—*Improvement in Power Looms*.—Patent dated January 13, 1857; England, March 7, 1855.—This invention consists in the application of a cylinder *k*, which is placed at one side of the loom, with its axis opposite and in line with the fell of the fabric, and its end about nine inches from the edges of the fabric, which passes over a surface, in going to the taking up roller, corresponding to the upper surface of the aforesaid roller, which is fluted longitudinally to a pitch equal to the pile loop formed by the wires in the fabric, a wire *F* being placed in each groove. Each wire *F* carried by the grooved cylinder, as it comes opposite the fell of the fabric by the rotation of the roller, is pushed along its groove into and through the shed; when across the fabric the end of the wire still remains in its groove in the roller, and when woven in the fabric it is allowed to remain till a certain number of wires have been successively pushed into the shed and have been woven in the fabric in like manner, when each wire is successively withdrawn from the fabric, so that a certain number of wires always remain in the fabric, one wire being withdrawn from the fabric for each wire pushed into the shed, the revolving of the cylinder returning the wires for insertion. The shuttle boxes are detached from the slay on the motion side, and have a movement corresponding to that of the slay at the moment of picking the shuttle across the shed, but do not advance with the slay to the point of beat up, as the fluted cylinder would be in the way.

Claim.—When applied to looms, or machinery for weaving pile fabrics, &c., the arrangement of the wires in grooves or flutes, formed in a roller or cylinder, the wires on being pushed into the “shed” never wholly leaving the grooves in the roller or cylinder.

Also, as a peculiarity and novelty, the arrangement of the wires, so that the one to be inserted in the shed is opposite, or nearly opposite, and in a line with the fell of the fabric, or that point where the reed will leave the wire on beating up such wires when so arranged, having to be bent out of the straight line to present the points towards the widest part of the shed, the whole combined and arranged substantially as described.

No. 16,354.—FRANÇOIS DURAND, of Paris, France.—*Improvement in Looms*.—Patent dated January 6, 1857.—A detailed description of this machine would take up too much space to be given here; the arrangement of the bobbins *d*, *d*¹, *d*², *d*³, thread carriers *Y*, and needles 9, 9¹, 9², 9³, permits any number of colors to be employed in the weft, using one or more thread carriers. When only one color is required in the weft the thread carrier *Y*, arranged in the circular race way between plates *V* and *W*, may be furnished with a bobbin-like shuttle, and may have a reciprocating motion passing through the shed in opposite directions alternately.

Claim.—First, the combination with a stationary race way of a reed passing entirely through the same, substantially as specified.

Second. The weft thread needles *g*, controlled by a jacquard machine or other pattern mechanism, to operate as described upon the weft threads in combination with a thread carrier of the character specified.

Third. The unhooker *t* operating in combination with the thread carrier substantially as and for the purpose specified.

No. 16,405.—DANIEL W. SNELL and STEPHEN S. BARTLETT, of Woonsocket, R. I.—*Improvement in Looms*.—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claims and engraving.

The inventors say: We do not claim priority in using a "strain" as a means of regulation, for under various modifications it is found in use: for instance, Hendrick employs strain acting upon or with the moveable reed, as his regulating feature; also Stone, Potter, and others, their motions acting in combination with an intermittent take-up motion; Knowles, Boyd, Bigelow, Mason, and others, use one or more stationary or reacting vibratory whip rolls as their point of regulation; while Taylor and Wilcox, and others, employ the beam as a means of regulation.

We claim, first, employing the positive take-up mechanism W Y, or cloth roll Z, as the point through which the variable strain and wind of warps is made to act more sensitively than from or by the variable or vibratory reacting motion of the whip rolls, or sudden jerking of the beam or movable reeds.

Second. Effecting and producing a regular delivery, and uniform strain of the warps, by the equalizing strain lever P, said strain lever being acted upon by the variable strain of the warps through the positive take up mechanism or cloth roll as represented.

Third. The equalizing strain lever P acting in combination with the positive take-up mechanism and cloth roll as represented.

Fourth. The equalizing strain lever P, when operating in connexion with the positive take-up mechanism, in combination with any mechanism for producing rotary motion to the beam, and with any device or means for regulating the delivery and strain of the warps as the beam decreases in diameter, and as the desired strain requires.

Fifth. Employing the rod T with the pin X, or equivalent, to act upon the strain lever P as a means of moving the weight K when the balance spring S or equivalent device is not sufficient to move it.

Sixth. In combination with the pulley F and pinion C we claim the moveable weight K, the fixed or yielding sectional friction piece G, and friction lever J, as and for the purpose represented.

Seventh. In combination with the weight K and friction lever J we claim the rack N, or its equivalent, to so act upon weight K through catches L, or analogous devices, as to gradually move the weight K towards the fulcrums of lever J as the beam decreases in diameter, and as the desired strain of warp requires.

Eighth. In combination with the weight K and friction lever J we claim the jointed or stationary sectional friction piece G and set screw H as and for the purpose represented.

No. 17,353.—NATHANIEL B. CARNEY, of New York, N. Y., assignor to JOHN R. LIVINGSTON, CHARLES H. HASWELL, and RUSSELL C. ROOT, of the same place, trustees.—*Improvement in Looms*.—Patent dated May 19, 1857.—The general features of this invention will be understood from the claims and engravings.

Claim, 1st. The weaving of fabrics within and upon a circular frame or looms, arranged about a common centre, producing the fabric at the central part, the shuttle being carried in a circle round the frame or loom in a continuous movement, the warps, shuttles, and filling being placed at the top of the loom, and the machinery for operating acting underneath, the weaving being effected by machinery, as described.

2d. The combination and arrangement of the machinery described, acted upon and driven by the spur-wheel Q, and its eccentric grooves and their connexions by which the sliding frames holding the warp wires or heddles are caused to reciprocate in opposite directions in equal times and regular succession, and the shuttles are made to rotate about the circumference of the loom in a plane perpendicular to the planes of motion of the sliding frames, and in equal times so as to pass between the upper and lower sets of warp threads when apart, thus producing a fabric at the central point.

3d. The combination of the roller covers and barrels, operating together, as described.

4th. The combination and arrangement or mechanism of the flat wheels or disks with their grooves with eccentrics, cams, and connecting rods and slides; the rollers cover the levers, bolts and slides; the levers carrying a motion from the rollers and covers to the warp wires, so as to hold them fast or set them free to move with the frames, the whole operating in conformity with Q and its connexions, thereby regulating the pattern, shape, or figure of the fabric to be woven.

5th. The giving to the shuttle the same continuous line of motion, without any divergence, thus avoiding the danger of injuring the operator or the fabric from an accidental false direction of the shuttle.

6th. The form and construction of the shuttle Q¹ r, as described, having its teeth on the underside or outside of its arc, and also the shuttle Q s, constructed so as to adapt itself to the increasing growth of the fabric, and pressing up the filling as described.

No. 17,375.—WILLIAM H. HOWARD, of Philadelphia, Pa.—*Improvement in Looms*.—Patent dated May 26, 1857.—When the lay recedes, the combs fall into the warp or web at the points where the shed open; when the lay F advances it, strikes the under side of the arms C that is hinged on rod D, and causes the comb to rise just in time to clear the reed as it advances to beat up the weft last thrown across; on the receding of the lay, the combs fall into the warp again, and thus prevent the contraction by holding the thread of the weft on the outside tooth of the comb.

Claim.—The holding of the threads of weft and warp in a web of cloth, extended by combs applied to the selvages and warp threads thereof, as described, or by any other equivalent mechanism.

No. 17,404.—FRANKLIN PAINTER, of East Hampton, Mass., assignor to the NASHUAWANNOCK MANUFACTURING COMPANY, of the same place.—*Improvement in Looms*.—Patent dated May 26, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: I do not claim a patent barrel in connexion with a loom, it is an old device.

I do not claim to have invented a take up motion or automatic mechanism for stopping its action, because it would be useless to me unless combined with a divided reed or some equivalent thereof for beating up properly when the take up is stopped.

I do not claim to have invented a loom which will at the proper time form a shed on one side only of a button hole, while the rest of the warp, whether filled or unfilled, lies out of the path of the shuttle, as a loom producing that effect has already been patented.

I *claim*, 1st. A divided or sectional reed ff^1 , operating substantially in the manner and for the purposes set forth.

2d. I *claim*, in combination with such a divided or sectional reed a take up motion or apparatus, which is thrown out of action at certain periods, substantially as described.

3d. I *claim* a pattern barrel l , or its equivalent, in combination with vibrating levers, acting substantially in the manner and for the purposes specified.

4th. I *claim* an apparatus substantially such as is specified, viz: a pattern barrel l^1 , or its equivalent, in combination with a primary pattern barrel, or its equivalent, arranged in such manner substantially as specified, that the former shall at proper times prevent the selection of heddles or leaves of heddles by the latter, substantially in the manner and for the purposes set forth.

5th. I *claim* a latch k , substantially such as is described, acting substantially in the manner and for the purposes set forth.

6th. I *claim* a divided reel, substantially as is described, in combination with proper mechanism for forming a shed on one side only of a slit or button hole at the same time.

And, lastly, I *claim* a primary barrel for selecting heddles or leaves thereof, in combination with a secondary pattern barrel l^1 for preventing their selection, and vibrating levers l^2 acted upon by both barrels, or their equivalents of these parts in combination, each acting in combination with the others, substantially in the manner and for the purposes described.

No. 18,061.—EDWIN A. SCHOLFIELD, of Westerly, R. I.—*Improvement in Looms*.—Patent dated August 25, 1857.—This invention consists in driving the cam wheel A, which acts on the harness, not by a uniform motion, but by an intermittent and variable motion, produced by the action of studs e , of the disk F, upon the slotted disk B, its periods of intermission and change coinciding with those of the spring or changing of the harness.

The inventor says: I am aware that the star-gears, under a modified form, have been used for changing the position of the shuttle-box, and also the pattern-chain which governs the order of succession of

the harness, as in the patents of Samuel Eccles, of March, 1850, and Samuel and James Eccles, of August, 1852; but these are for totally different objects from that contemplated in this.

I do not claim the construction or use of star-gears for any purpose except to drive a cam-wheel to spring the harness in weaving.

But I *claim* the driving or revolving cam or tappet-wheel, which acts to spring the harness or produce a shed in weaving by an intermittent or variable motion, by the use of star-gears, substantially as above described.

No. 17,189.—ERASTUS B. BIGELOW, of Boston, Mass.—*Improvement in Looms for Weaving Pile Fabrics*.—Patent dated May 5, 1857.—The cam o^1 , through the medium of cam roller p^1 , lever q^1 , and bar r^1 , moves the vibrating staff i^1 from the cloth, the spring s^1 forcing roller p^1 constantly against cam o^1 . Motion towards and from the lathe is given to the staff by rocking frame j , by means of cam u^1 , roller v^1 , and arm n^1 . When the carrier B, on staff i^1 , returns for a new wire, the staff i^1 strikes the adjusting pin e^2 , and thus through the spring of said staff brings said carrier in a line with the wire.

Claim.—First, operating the pile wires by a vibrating staff controlled by a parallel motion, substantially as specified.

I also *claim* the method of constructing and organizing the hook t and carrier B, for operating the pile wires, substantially as specified.

And I finally claim, in combination with the aforesaid hook and carrier, a box or holder, A, for holding the pile wires in position, and suitably guiding said hook to act thereon, substantially as specified.

No. 16, 370.—ERASTUS B. BIGELOW, of Boston, Mass.—*Improvement in Looms for Weaving Pile Fabrics Double*.—Patent dated January 13, 1857.—A detailed description of this invention would take up too much space to be given here.

Claim.—First, the employment in power looms for weaving two fabrics at one operation, such as described, of transverse intersecting pile wires, when said transverse intersecting pile wires are woven in between the two fabrics, substantially in the manner and for the purpose specified.

Also the application or employment in power looms for weaving two fabrics at one operation, of a double positive shuttle motion, in combination with transverse intersecting pile wires, for keeping the two fabrics apart, substantially as described.

Also the mode of arranging the parts which connect the shuttle or shuttles with the loom shipper, whereby the loom is thrown out of gear when the filling fails in either shuttle, substantially as specified.

Also elevating and depressing the reed, substantially in the manner and for the purpose set forth.

Also the mode of arranging the cams, whereby the combined action of the lathe, shuttles, intersecting pile wires, and ground warps is effected, that is to say, placing the cams $f^4 f^4$ for operating the lathe on the shaft m , and the cams $r r$ for operating the shuttles on their respective counter shafts u and s , all said cams moving at the same relative velocity, whilst the crank q^3 and cam v^3 for operating the pile wires, and the cams or tappets $p^4 p^4$ for operating the ground

warps are placed on the said counter shaft *u*, but move at different relative velocities, the said crank *q*³ and the said cam *v*³ being affixed to the said counter shaft *u*, whilst the said shuttle cam *r* and the said ground warp cams or tappets *p*⁴ *p*⁴ turn loosely thereon, the whole being geared together, and operating substantially as described.

And finally, the mode of arranging the double let-off motion, in connexion with one positive take-up motion, whereby the delivery of the ground warp of each fabric is regulated by its respective tension, and held at the beat of the lathe substantially as specified.

No. 16,392.—STEPHEN C. MENDENHALL, of Richmond, Ind.—*Improvement in Hand-Looms*.—Patent dated January 13, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: I *claim* the universal treadle cam *J*, cam *O*, shaft *h*, spring *S*, and hinge *u*, in combination with the revolving cam-wheel *S*, connecting rod *2*, brace *r*, hook *k*, pin *i*, and spring *v*, or their mechanical equivalents, substantially for the purpose set forth.

I do not claim the arms *g g*, or the triggers *w w*.

But I *claim* the cords *x x* and pulleys *c c*, in combination with the spring *h*, arms *g*¹ *g*², triggers *w*¹ *w*², and cords *f f*, for the purpose of throwing the shuttle back and forth through the loom, as described and set forth.

No. 18,208.—GEORGE MATOON, of Chicopee Falls, Mass.—*Improvement in Harness for Looms*.—Patent dated September 15, 1857.—Figure 1 represents a harness as constructed in the ordinary manner; figure 2 represents a harness made in an improved manner, which will be understood by reference to the claim and engravings.

The inventor says: I do not claim making a harness with a knot at the top as well as one at the bottom of each eye thereof, as this has been done before. When the eye is knotted at the top and bottom, there is double the friction and wear on the warps that takes place when the eye is knotted only either at top or bottom.

I *claim* the improved mode of making a harness so that its leash *d* and knot *b* shall be below its eye *a*, and the threads of each loop be caused to pass against one side of their shaft or bar *A* instead of being caused to embrace opposite sides of it, namely, first knitting the harness with a leash at top and one at bottom, or one above as well as one below each eye, and subsequently changing the upper shaft so as to pass it between the several loop threads of the upper side of the harness in such manner as to make both threads of each loop pass against one side of the shaft.

No. 17,267.—WARREN W. DUTCHER and GEORGE DRAFER, of Milford, Mass.—*Improvement in Hook-Temples for Looms*.—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—So combining with the temple and its spring *C* a lever *E*, or its equivalent, that just before the lay beats up it shall, by its

action on such lever, cause the temple to be advanced on the cloth, or towards the reed, in order that when the lay may move in the opposite direction the spring C of the temple shall draw back the selvage of the cloth so as to straighten the warp threads thereof, substantially as specified.

No. 17,193.—SAMUEL BOORN, of Lowell, Mass.—*Improvement in the Picker motion for Looms*.—Patent dated May 5, 1857.—The picker staff A, when operated in the proper manner, vibrates on its rocker B, but at the same time is raised and lowered in order to cause its striking point to move in a straight line, and the centralizer H serves to maintain a uniform position of the lower part of the picker staff when in operation.

Claim.—Arranging the centralizer and its mortise with the picker staff and its rocker, so as to operate therewith as specified.

No. 17,468.—THOMAS J. MAYALL, of Roxbury, Mass., assignor to Himself and GEORGE N. DAVIS, of Boston, Mass.—*Improvement in Pickers for Looms*.—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—A picker made of hard vulcanized rubber, without seams, in the manner set forth.

No. 16,824.—JOHN L. CHENEY, of Lowell, Mass.—*Improvement in Power Looms*.—Patent dated March 17, 1857.

I do not claim supporting the picker staff by a rocker and horizontal rail or stand.

Nor do I claim applying to the picker staff and its supporting bracket, a curved slotted guide and a roller, as the same is shown in Albert C. Williams's application for a patent.

Nor do I claim applying to the picker staff a spring for the purpose of retracting such a staff.

Nor do I claim applying to the rocker and its stand a spring to bring the rocker back to its place after having picked, and also to secure it to the rail while in the act of picking.

Nor do I claim making the striking point of the picker staff to travel in a straight horizontal line.

I *claim* my improved picker motion or mechanism as made with a guard stand and rocker, a stationary guide Q, and a stud or roller P, and with reference to the picker staff I, substantially as described.

Also, so arranging the top bearing surface of the stand of the rocker that it may incline downward, as specified, and so as to obtain all the advantages of a spring without the actual application or use of the same, meaning to claim such an arrangement of the top surface with respect to the rocker and staff as an improvement equivalent to the spring.

No. 17,912.—ANDREW ALLEN, of Wilmington, Del.—*Improvement in Power Looms*.—Patent dated August 4, 1857.—A detailed description of this invention would take up too much space to be given here;

the principal features thereof will be understood by reference to the claims and engravings.

Claim.—The inventor says: I claim, first, the combination of the step-formed indicator L, attached to the lifting and dropping mechanism of the shuttle boxes, and the adjustable pins P¹, P², P³, P⁴, of the pattern chain, substantially in the manner described, for the purpose of controlling the pattern and affording a greater facility for varying the same than the means heretofore used.

I am aware of the means described in the patent of B. H. Jenks, dated October 24, 1854, for varying the movement of the shuttle boxes by an auxiliary wheel; and this, therefore, I do not claim.

But I claim, second, the retarding wheel C, with its pins *h h*, combined with the pattern chain wheel or cylinder, substantially as described, to arrest the pattern chain or cylinder, when several picks are required to be made by the same shuttle, or with the same filling thread.

3d. The combination of the pins *m m*, on the pattern chain or cylinder, and the lever N, with the pawl E, of the retarding wheel, for the purpose of causing the operation of the retarding wheel to be suspended under the control of the pattern chain when desired, substantially as described.

No. 18,320.—ERASTUS B. BIGELOW, of Boston, Mass.—*Improvement in Power Looms, for weaving Wire Cloth.*—Patent dated October 6, 1857.—In describing his improvement the inventor says: Owing to the inflexibility of wire, the movements of the ordinary power loom are not suited to weaving wire fabrics, the fly shuttle being too uncertain in its action for perfect work, and not adapted to straighten the wire as it comes from the bobbin. To meet the exigencies of the case, therefore, I so organize my wire cloth power loom as to give the shuttle a positive mechanical motion as it is being passed through the end of the wire warps from side to side of the loom; and I also provide the shuttle with a wire straightener through which the filling wire passes, and is straightened as it is drawn from the shuttle bobbin by the aforesaid positive movement of the shuttle; and to prevent the drag, or pull required to straighten the filling wire, as aforesaid, from drawing in the selvage wires and contracting the cloth, I employ painted bars, one on each side of the loom, which have a vibrating motion towards and from the selvages of the cloth, also a vertical motion up and down, by which latter motion they are alternately thrust between the filling wire of the shuttle and selvages of the cloth, so that when the shuttle is passed through the wire warps the filling wire draws around said painted bars and pulls them respectively towards the selvages of the cloth, until they are arrested by a strap which prevents the pull or drag of the filling wire from drawing in the selvage wires; then just before the shuttle has reached its greatest extent of outward motion, the painted bars are withdrawn from between the filling wire and the selvage wires, to allow the final motion of the shuttle to draw the filling wire snug up to the selvage wires and produce a true and even selvage.

Claim.—The inventor says: I claim, first, the mode of construct-

ing and operating the shuttle and combining it with the selvage-forming apparatus, whereby the filling wire is straightened, the certain action of the shuttle secured, and the width and selvages of the wire cloth preserved, substantially as specified.

I also claim the mode of arranging the parts which connect the selvage-forming apparatus with the loom shipper, whereby the loom is thrown out of gear when the filling wire fails, as set forth.

I also claim the mode of giving a double action to the lathe, substantially in the manner and for the purpose specified.

And I finally claim the mode of constructing and arranging the parts of the warp wire stop motion, and combining it with the loom shipper for stopping the loom when a warp wire breaks, substantially as specified.

No. 17,926.—W. H. GRAY, of Dover, N. H.—*Improvement in the Let Off Motion of Power Looms*.—Patent dated August 4, 1857.—Every time the lay moves forward, the cam I on the treading shaft H acts upon the part E of the clutch, to turn it in the direction of the arrow shown in fig. 3, and at that time the part D of the clutch is held in contact with the part E by the action of a spring in the box c, which produces sufficient friction between D and E to cause the latter to turn the former, and with it the shaft P; thus causing the endless screen a to operate wheel C to turn the yarn beam to let off the warp yarn. By this movement of the part E of the clutch, the latch d² is caused to pass the lever J, and be retained by said lever after the offset of the cam I passes the arm d, thereby preventing the part E of the cam from returning before the clutch is uncoupled, and thereby drawing back the shaft and causing the yarn let off to be taken back again. Before the lay completes its forward movement, the cam G, by its action on the lever F, moves the said part D out of contact with the part E, and leaves the latter free to move back in the opposite direction to the arrow shown in fig. 3.

Claim.—First. The combination of the shaft P, the endless screw and worm wheel a and c, or their equivalents, the friction clutch D E, the arms d e attached to the friction clutch, the lever F, the cams G and I, and the lever K, the whole arranged, applied, and operating substantially as set forth for the purpose specified.

Second. The combination of the latch d² attached to the loose portion R of the friction clutch, the levers J and T operating as described, to detain and liberate the said portion of the clutch, substantially as and for the purpose set forth.

No. 17,559.—WARREN W. DUTCHER, of Milford, Mass.—*Improvement in the Roller Temple for Looms*.—Patent dated June 16, 1857.—The end of roller A revolves in a cylindrical recess of the part a which encloses said roller, and serves, during the process of weaving, as a guard to prevent the loose warp or filling threads from getting in between the end of roller A and the part a of the case.

Claim.—The described improved roller temple case, made with a cylindrical recess for the reception and protection of one head or end of the toothed roller in the manner as specified.

No. 17,323.—LEVI FERGUSON, of Lowell, Mass.—*Improvement in the Shuttle Motion for Looms*.—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim generally the employment of curved guides near the bottom of the picker staves to direct the upper ends of the staves in straight lines parallel with the warps; as I am aware that plates with curved slots to receive and form guides to studs on the picker staves have been employed, which device is less simple and more expensive in its construction, and does not work with so little friction as mine.

Nor do I claim, of itself, enclosing the retracting spring in a box carried by the rocker shaft.

But I *claim* the combination, substantially as described, of the rest *e* carried by the rock shaft, the curved sliding guide rod *b* connected with the picker staff, and the box *g* attached to the rock shaft—the latter serving not only to guide the sliding guide rod, but to contain the spring by which the picker staff is thrown back after throwing the shuttle—the whole operating substantially as set forth.

No. 17,746.—ALEXANDER McCausland, of Providence, R. I.—*Improvement in Paper Cop Tubes*.—Patent dated July 7, 1857.—The strip of paper, of the shape represented in the engraving, is moistened with paste at one of its sides, then the wide end of the strip is wound first, by hand, once around the spindle, and the spindle is then carefully turned until the whole is wound up. By this process, the tube is produced shaped in the form of a truncated cone, the bore of which remains of the same size throughout.

Claim.—The paper cop tube, made of a strip of paper of the form represented, in the manner described, whereby greater strength is given to the base of the tube while the desired conical form is at the same time attained.

No. 17,050.—JOHN NORTH, of Middletown, Conn.—*Machine for Drying and Pressing Paper*.—Patent dated April 14, 1857.—The paper to be dried is placed at *l* on the endless belt *g*; and as it passes between the heated plates *e*, it is dried and carried to the printing cylinders *b*. The cylinders *b* are enclosed within a casing *d*, so that the ends of the said cylinders will fit closely to the ends of the casing, but that a space is left between the surface of the cylinders and the inner circumference of the casing. The rollers *c* rotate in this space and the interstices between the rollers *c* are filled with sawdust, and as the rollers *c* rotate, they constantly keep clean the circumference of the cylinders *b*.

The inventor says: I do not claim passing sheets of paper between heated cylinders or over-heated plates to dry the same, as that has repeatedly been done in the manufacture of paper; but such apparatus as heretofore used would not answer for printed paper, the printed surface of which must not be touched during the process of drying.

But I *claim*, 1st, the apparatus for cleaning the pressing cylinders, substantially as set forth.

2d. In combination with the pressing cylinder as described, the drying apparatus, consisting of heated plates or chests, between which the sheets of printed paper are passed on tapes without touching or dragging thereon as specified.

No. 17,352.—EDWARD N. SMITH, of Springfield, Mass., assignor to STEUBEN S. BACON, of Boston, Mass.—*Improvement in Machines for Folding Paper*.—Patent dated May 19, 1857.—The sheet to be folded being placed upon table *a*, the adjustable pins *a*² enter the register holes of the sheet and adjust the paper to its proper position. The fingers *e*¹ of the sliding frame *c*, take hold of the front edge of the sheet, the register pins *a*² are withdrawn as levers *v* are operated upon, and the sheet is carried forward, resting upon frame *c*, under the straight edge *d*; as the frame *c* moves forward the straight edge *d* descends on the sheet and drives it down through slit *c*², thus effecting the first fold; the edge *d* being provided with points *i* which prevent any displacement of the sheet. When the sheet passes from the first fold it is necessary to arrest it at the exact point to accurately receive the second fold; this is accomplished by the adjustable stop *F*, which determines the position when the sheet is to receive the second fold, which latter is effected by knife *g*. In a similar manner the sheet receives its third and fourth fold; and at the last fold the rollers *m* deliver it to a fly *o*, which places it upon a paper board *M*.

Claim.—1st. The employment of points or register pins, or their equivalents, for the purpose of correctly presenting sheets of paper to a folding apparatus, substantially in the manner and for the purpose set forth.

2d. The manner of adjusting the register pins, and their peculiar movement, as described, for the purposes specified.

3d. Combining with the knives or straight edges, or their equivalents, the points projecting beyond the edge thereof, for steadying the sheet while being folded, as specified.

4th. Reducing the speed of the succeeding set of rollers, from first to last, so as to proportion the distance traversed by the sheet at each succeeding fold to the reduction of its size, so that the time the sheets are moving from point to point shall be equal, or nearly so.

5th. The adjustable stop for determining the proper position of the sheet to receive its second and succeeding folds, as specified.

6th. The combination of the fly with the folding apparatus, for laying off the folded sheets, as described.

No. 17,663.—EDWARD B. BINGHAM, of Brooklyn, New York. *Improvement in Machines for Making Paper*.—Patent dated June 30, 1857.—The pulp, being properly prepared, is placed within the vat *A*, and the water will pass through the wire cloth covering the cylinder *A*, the fibre of the pulp adhering to the wire cloth. Motion is given to the endless aprons *c* on their rollers *a*, and the aprons knit or weave the fibres of the pulp together on the cylinder, so that a very compact paper is made.

The inventor says: I do not claim to be the first inventor of agitators for moving the fibres of the pulp, and thus causing them to interweave.

I especially disclaim the employment of spiral agitators, as in Marland's patent.

I *claim* the employment or use of the endless aprons C, one or more placed within the pulp vat adjoining the cylinder B, for the purpose set forth.

No. 17,917.—PATRICK CLARK, of Rahway, New York.—*Improvement in Machines for Making Paper*.—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I am aware that the pump B, or an equivalent device, together with the pipe C, entering the vat at Y, is old and well known in connexion with such machines as I have described; and the pipes F and K are also old and well known. Therefore, I do not claim those pipes separately and in themselves.

Neither do I claim to have invented the use of a cistern to collect the water which is separated from the pulp during the process of forming pulp into paper by means of a machine.

I *claim* the arrangement of the conducting pipes W, connecting the pump B with the jet pipes F and K, for the purpose of washing the felt X and cylinder A with the water which has been separated from the pulp, and thus avoid the necessity of introducing for that purpose water from any other source into the machine, all substantially as described and for the purpose specified.

No. 16,430.—JOHN S. BLAKE, of Claremont, New Hampshire.—*Improvement in Machinery for Making Paper*.—Patent dated January 20, 1857.—The pulp passes on the wire cloth E in the usual manner; the pump I is put in operation, and a vacuum is produced in the chambers *a* and *b*; as the pulp passes over chest C, the pressure of the atmosphere caused by the vacuum produced within chest C expels the moisture from the pulp, the water and air are drawn down within pipe D, through pipe G, into pump I, and both are forced into trunk F¹, the water falling to the bottom of said trunk; as the operation continues, the water is forced upward within the pipe K by the pressure of the air in trunk F¹, and passes through one of the pipes *a*¹ into pipe I, and is conveyed by pipe M to any proper receptable. The air in the upper part of trunk F¹ passes through pipe O into the two pipes P and P¹, and is ejected through tubes *i* and *j*, cutting the edges of the pulp on wire cloth E, thus forming a clear edge at each side of the paper. The felt apron S receives the paper from the wire cloth apron E, and passes between the wet press rollers T, and also between the usual heated cylinders, the roller V compressing the paper, and expelling the moisture therefrom. The margins of pulp cut off from the paper by tubes *i* and *j* are discharged from the apron E by jets of water, which flow from the tubes *k* of the pipe Q.

The inventor says: I do not claim expelling or forcing the moisture from the pulp by means of atmospheric pressure, irrespective of the means employed for effecting that purpose, as herein described.

I *claim*, first, the employment or use of the pump I, vacuum chamber *f*, and vacuum chest C, provided with the two compartments *a* *b*.

and communicating with the pipes D G by means of the cocks *e d*, the parts being arranged substantially as shown and described, for the purpose set forth.

2d. The air and water trunk or reservoir F, provided with the pipe K, and communicating with the external pipe L, as shown, the reservoir communicating by means of a pipe O with the pipes P P, having the tubes *i j* connected to them—the whole being arranged, substantially as described, for the purpose of trimming the edges of the paper or pulp; and I further claim trimming the edges of the pulp by means either of air or steam, when ejected through tubes *i j*, arranged as shown.

3d. The pipe Q, with the tubes K attached and arranged as shown, for the purpose of discharging the margin or strips of pulp from the wire cloth apron A.

4th. The curved rod W, with the rollers *s s'* placed on it, the roller *s'* being connected with the springs *t*, and arranged as shown and described; whereby the felt upon S is stretched or distended transversely, and also guided or properly retained in position as it operates.

5th. The cylinder U, in combination with the wet press cylinders T T, when the speed of the cylinder U and cylinders T T is made variable for the purpose of stretching or distending the apron S longitudinally, as herein described.

No. 18,389.—ROBERT H. COLLYER, of Camden, N. J.—*Improvement in Preparing Paper Pulp from Beet and other Refuse*.—Patent dated October 13, 1857.—This invention consists in the preparation of residue of beet root, mangel-wurtzel, and other species of the genus, left in the process of sugar-making and distillation, to be used in the manufacture of paper. By this invention the said residue for paper-making material is prepared in such a manner that the glutinous, albuminous, gelatinous, and other protein qualities it contains, shall be developed, preserved, and brought into an active state and rendered useful in the application and use of said residue, when prepared; in combination with other materials, to form a pulp convertible by known modes into paper, papier-mache, millboard, and other paper manufactures.

The inventor says: I do not mean to confine myself to the combinations and proportions above stated.

But I claim the exclusive use and employment for making paper and paper manufactures, in any combination or proportion whatsoever of the residue prepared, so as to retain and preserve the albumenomucilaginous substance, as before described, or in any other manner substantially the same of beet root, mangel-wurtzel, and other species of the genus, beta, left after the sugar-making and distilling processes have extracted the saccharine matter.

No. 18,190.—WILLIAM N. CLARK, of Chester, Connecticut.—*Improvement in making Paper Pulp from Ivory*.—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The using of ivory as stock to make pulp for the manufacture of paper.

No. 17,387.—MARIE AMÉDÉE CHARLES MELLIER, of Paris, France.—*Improvement in making Paper Pulp*.—Patent dated May 26, 1857; Patented in France, August 7, 1854; Patented in England, October 26, 1855.—The straw or fibrous matters are cut in short lengths, are washed in warm water, and then placed within the rotary steam-boiler represented in the engraving, together with a solution of caustic alkali, and the material is boiled in this solution by the steam entering pipe H, passing out at the end of I, and then through pipes F, and finally escaping through pipe K; when the material has been treated in this manner it may be bleached, and is then ready for use.

The inventor says: I do not claim the general use of caustic alkaline solutions, nor the employment generally of a close boiler for boiling straw and other vegetable fibrous substances.

But I *claim* the use of a solution of caustic soda *nao* in a compartment of a rotary vessel separate from that which contains the steam heat, substantially as described.

Also, the described process for bleaching straw, consisting in boiling it in a solution of pure caustic soda *nao*, from 2 to 3 Beaumé, at a temperature not less than 310 Fahrenheit, after it has been soaked and cleaned, and before submitting it to the action of a solution of chloride of lime from 1 to 1½ degrees, substantially as described.

No. 16,949.—COLUMBUS F. STURGIS, of Dallas county, Ala.—*Improvement in the Manufacture of Paper Pulp*.—Patent dated March 31, 1857.—The bark of the root and of the stalk of the cotton plant is gathered in its most perfect state and subjected to cold water washings to separate the coarser impurities from it. The material is then subjected to washings in hot water, which separate the skin which invests the roots and stalks, in which process is also dissolved the mucilaginous matter contained in the material which is to be preserved in the material as a sizing for the paper. The material is then ground to pulp, and manufactured into paper in the ordinary way.

Claim.—The described process of manufacturing paper pulp from the bark of the root and the bark of the stalk of the cotton plant.

No. 16,994.—CHARLES L. POND, of Buffalo, N. Y.—*Improvement in Paper Ruling Machines*.—Patent dated April 7, 1857.—The screw S through the shaft arm D secures the attachment to the pen-holder; its situation is such that its edge shall rest upon the roller under the striking point when the pens touch the paper. The point *m* of the concentric edge being in contact when the pen points drop upon the head line, the box *c* and rim *h* will revolve in the direction of the arrow as the paper is carried forward, and the pens be permitted to mark during the time the concentric portion of the rim is in contact with the surface on which it rolls. When the point *m*¹ is reached, the eccentric will lift shaft *a* and with it the pen-holder, causing a space to be left while the rim rolls from *m*¹ to *m*, when a new contact of the pens and paper ensues. The tongue *e* enters a new tooth of the stop wheel F at each revolution; and when the rim *h* flies

back by the action of coiled spring *l* on the lifting of the pen-holder, the contact of the last notch and the said tongue will insure that the rim *h* assumes the position from which it had previously started.

Claim.—The spring connected box and shaft, combined with the stop-wheel and the detachable rim, as described, constructed, arranged, and operating substantially as and for the purposes specified.

No. 17,895.—JULIUS A. ROTH, of Philadelphia, Pa.—*Improvement in Treating Paper Stuff.*—Patent dated July 28, 1857.—This invention consists in treating the fibres of wood with a sulphurous acid bath, either in liquid or gaseous form, preparatory to the application of the chlorine solution for bleaching the same for the purpose of destroying the injurious effects of the relation of the chlorine bleaching agents to the nitrogen contained in the wood, by which the fibres are prevented from bleaching pure white.

Claim.—The combined application of sulphuric acid upon woody fibres with that of the chlorine bleaching agents, substantially as described.

No. 16,927.—LOUIS KOCH, of New York, N. Y.—*Improvement in Machines for Making Pasteboard.*—Patent dated March 31, 1857.—The operation of this machine is as follows: The paper web upon the felt *F* is wound around the forming roller *A*, and the roller *E* which is pressed against said forming roller by spring *a*, will gradually be forced away from said roller *A* as the board increases in thickness, taking with it the arm *G* and screw *O*. When the pasteboard has obtained the required thickness, which is regulated by the position of the screw *O*, said screw *O* acts upon lever *R*, so as to force the lever *R* away and clear of the nose *n* on the arm *H*; setting thereby the slide *P* at liberty, which will then be forced outward by the spring *F*, by which action the pasteboard which has been formed on roller *A* will be cut in two. When the slide *P* has cut the board and partly loosened the same from the forming roller *A*, the pins *r* on the ends of the roller *A* act upon the levers *m* and communicate thereby a downward motion to the frame *S*, by which motion the India rubber *x* strips the board off from the end of slide *P*, when said board falls upon the roller *p* and felt *T*, by which it is carried away.

Claim.—The arrangement of the roller *E* in connexion with the arm *G* and projection or screw *O*, for the purpose of operating the lever *R*, by which the slide *P* is held fast or set at liberty when the board has obtained the required thickness, together with the arrangement of regulating, by means of said screw *o*, the required thickness of the pasteboard, in the manner specified.

Secondly, the moveable slide *P* or its equivalent, constructed and operated as described, and for the purpose of cutting or tearing and lifting the pasteboard which was formed on the roller *A* from said roller, after the same has obtained the required thickness.

Thirdly, the arrangement of the moveable frame *S* with leather, or its equivalent, attached, for the purpose of stripping off the cut pasteboard from the end of the slide *P*, the whole being operated in the manner as specified.

No. 17,489.—PATRICK CLARK, of Rahway, N. J.—*Improvement in Machines for Drying Pasteboard or Paper*.—Patent dated June 9, 1857.—Steam is admitted through pipe K, which, by means of main pipe B, fills the hollow leaves A. These leaves can be turned on their hollow trunnions, which admit the steam into the hollow space; and when the upper leaves are turned to the position represented in the engraving, the pulp can be spread on the horizontal leaves, where it is dried by the heat of the steam.

Claim.—The inventor says: I am aware that hollow tables have been used for drying purposes, the materials spread on the top of them to be dried; but I am not aware that one heated hollow table was ever placed above another for such or any other purpose, or arranged in the manner I have described. And I am also aware that heated hollow plates have been used for heating purposes; but I am not aware that they have been used in the manner described.

I claim the arrangement of the series of hollow heated plates for drying purposes, substantially as described and for the purpose set forth.

No. 16,928.—LOUIS KOCH, of New York, N. Y.—*Improvement in Machinery for Pressing Water out of Pasteboard*.—Patent dated March 31, 1857.—The pasteboard passes from the forming roller A, between the rollers *m p*, upon the felt T, by which it is carried over and between the different pressing rollers R, R¹, R², R³, R⁴, R⁵, and passing also between the felt cloths V and V¹ of the rollers M, N, R¹, and M¹, N¹, R⁵.

Claim.—The combination of the pressing rollers, in connexion with the rollers N M and N¹ M¹ arranged with endless felts, in such a manner that the board shall be made to pass between the pressing rolls between two thicknesses of felting, to allow the water contained in the board to be pressed out of the same without injuring the board during the pressing process, the whole being arranged in the manner and for the purpose described.

No. 17,723.—DENZLOW BURHAUS, of Burlington, Iowa.—*Machine for Cutting Pasteboard, &c.*—Patent dated July 7, 1857.—By forcing the paper against the cutter I, both surfaces of the paper are cut inwardly, so that no burr is left on either edges of the paper.

Claim.—The employment, in connexion with the grooved feed rollers, E F of a double-edged or V-shape cutter I, substantially as set forth.

I also claim the combination of the steadying roller H, with the feed roller F as and for the purpose described.

No. 17,754.—JOSEPH M. SMITH, of Manchester, N. H.—*Improvement in Covering for Drawing-Rolls*.—Patent dated July 7, 1857.—This composition for covering drawing-rollers consists of the following ingredients: 25 pounds of India rubber, 5 pounds of magnesia, 4 pounds of sulphur, 12 pounds of black lead.

Claim.—The use of black lead in combination with India rubber as a material for covering drawing or draft-rollers for the purpose of avoiding the effects of electricity and the adhesion of the cotton to the rollers, as set forth.

No. 17,496.—WILLIAM R. DUTCHER, of Lansingburgh, N. Y.—*Improvement in Rope Machines.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a friction applied between the motive power and the reel, and allow the latter to slip and only wind the rope as made. But I am not aware that an adjustable friction plate has ever before been applied in such a manner by the screw and spring 23 as to be adjusted and adapted to different characters of rope.

I claim the self-adjusting thimble, *m* or *o*, combined with the cone *l* or *n*, when kept towards the said cone by suitable yielding pressure, for the purpose of laying up either the strand or rope and adjusting itself to any inequalities without breaking either the yarns or strands, substantially as and for the purposes specified.

No. 17,787.—EZEKIEL GUILE, of St. Louis, Mo.—*Improvement in Rope Machines.*—Patent dated July 14, 1857.—By the use of the additional flyer *F*, the capacity of this machine can be considerably increased; for by placing the bobbin *a* and reciprocating traverse *d* in said flyer, the flyer *E* can be driven to double the velocity. The readies *r*, in passing from the twisting flyers *c* to the laying flyers *E*, will draw against the ends of rods *n*, so as to compress the springs *x*, and allow the catch bolt *u* to drop into the notch cut in bar *x*; but should one of them break, the spring *x* will distend and cause the pin in said guide rod to act on levers *x* and *v*, so as to detach bolt *u* from rod *x*, which, being acted upon by spring *z*, will be thrown back and the belt shifter will shift the belt to the loose pulleys, thus causing the machine to stop.

Claim.—The additional laying flyer *F*, when combined with the described machine, substantially as set forth and for the purpose specified; also, the automatic stopping apparatus, when combined substantially as described. Further, the curvilinear dies, as shown, for the purpose specified.

No. 17,005.—MILTON WALLWORK, of Hoosick Falls, N. Y.—*Improvement in Machinery for making Rope.*—Patent dated April 7, 1857. The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I do not claim pressing the rollers outward into contact with the ring by means of springs, as in Harris's patent.

I do not claim the giving to the strand flyers a rotary motion on their own axes to produce a twist of the strands by means of rollers on the axes of the flyers running in contact, with the inner face of a stationary ring.

But I claim the construction of the stationary circle, or ring, with

which the rollers *a* on the flyers *D* run in contact to produce the rotary motion that gives the twist of a series of segments *K*, one or more of which may be removed or withdrawn from the ring or circle, or replaced therein at pleasure, for the purpose of varying the twist substantially as herein set forth.

No. 17,084.—HARVEY W. FOWLER, of Hoosick Falls, N. Y.—*Improvement in Machines for making Rope*.—Patent dated April 21, 1857.—Motion being imparted to layer shaft *C*, the spider *E* revolves with said shaft, and the pressure of pulleys *f* against the face of the stationary disk *F* causes said pulleys and the flyer shaft *g* to rotate, and gives to the thread wound off from bobbin *i* the required degree of twist. The degree of twist can be regulated by moving the pulleys *f* up or down on their shafts *g*, causing them to traverse a larger or smaller circle on the face of the disks. The revolution of the layer shaft *C* gives to the combined strands their proper lay as they issue from the hollow end of shaft *C*.

Claim 1st.—The stationary disk *F*, arranged in relation to the layer shaft *C* and the spider *E* in the manner described, for the purpose of communicating motion to the flyers *h*, through the flyer pulleys *f*, as set forth.

. 2d. Arranging the series of flyer shafts *g* radially to the layer shaft *C*, and revolving them when the layer shaft is revolved, so as to give the proper degree of twist to the threads or strands as they leave the spools or bobbins in the flyers, by the peripheries of the flyer pulleys *f* being kept in contact with the face of the stationary disk *F*, the said pulleys being adjustable nearer to or further from the centre of the layer shaft, to decrease or increase the speed of the flyers, and through that to give a less or greater degree of twist to the thread or strand, as described and set forth.

No. 16,842.—MICHAEL H. JOHNSON, of St. Louis, Mo.—*Improvement in Rope manufacture*.—Patent dated March 17, 1857.—In the engraving, *A* is the frame; *N N* are the two condensing rollers, having their axis at *F G*; *B B* is the reciprocating carriage upon which the calender roller *M* and the bobbin *I* are placed; *C C* are the guides upon which the carriage traverses, the hooks *P P* having the weights *V V* attached or suspended on the axis of the bobbin at *H*. The calender roller has its axis in the carriage at *E*. *D* is an endless screw, which communicates the reciprocating motion to the carriage through the medium of the "dog" *U*. The power is applied to the pulley *J*, which communicates motion to the pulleys *K*, *Q*, and *R*, and also to the drum *L*, the calender *M*, and the bobbin *I*, by means of belts, as shown in the illustrations.

The inventor says: I do not claim the condensing rollers; nor do I claim, of themselves, the bobbin and calender roller.

But I *claim* the combination of the condensing rollers with the calender roller and bobbin, as described, whereby the sliver may be condensed to a greater degree than is admitted under the ordinary circumstances governing the aforesaid manufacture, with advantages as set forth.

No. 16,858.—JOSEPH WOOD, of Brooklyn, N. Y.—*Improvement in Machines for making Rope or Cordage*.—Patent dated March 17, 1857.—The object of this invention is to perform the first stage of the reduction of old rope to its original fibre, or, in other words, to effect a separation of the strands. It consists in a rotating roller head B, carrying two feed rollers E E, having their axes arranged perpendicularly to and on opposite sides of its own axis of rotation, confined with a pointed mandrel I, that is arranged in line with said axis of rotation. The rope being conducted between the rollers, the rotation of the rollers in the head drives the rope upon the point of the mandrel, while the rotation of the head upon its own axis gives the rope a rotary motion in contact with the mandrel in the opposite direction to the lay of the rope, by which combined operations the strands are parted.

The inventor says: I disclaim the invention of the revolving roller head itself, and its use for any other purpose than that of unmaking rope.

But I *claim* the combination of the rotating roller head and the pointed mandrel, to operate in the manner and for the purpose set forth.

No. 18,845.—JAMES HANLEY, of New York, N. Y.—*Improvement in mechanical movement for Sewing and other Machines*.—Patent dated December 15, 1857.—The claim and engraving explain the nature of this invention.

The inventor says: I do not claim the mere stopping of a machine by the intervention of a brake, as this is already done in several ways, by pawls, clutches, and tightening bands.

But I *claim* the roller r, moving in a conical recess, and brought into action both to hold and release automatically, by the friction of its surface contact with and by the motion of the machine, substantially in the manner and for the purpose set forth.

No. 16,745 —SAMUEL F. PRATT, of Roxbury, Mass.—*Improvements in Sewing Machines*.—Patent dated March 3, 1857.—F is the arm that operates the machine; F carries the feeding apparatus H, and is also rigidly connected with the needle carrier E. As F is raised, the needle is raised above the cloth and the bar H rises, the spring I presses the nipper K upwards, so as to clamp the cloth at O. The bar H rising still further presses the cloth up into the grooved projecting foot of D, thereby drawing or feeding the cloth for the next stitch. When the needle descends through the cloth, the spring P will come down upon the cloth so as to flatten it and prepare it for the next ascent of H.

Claim.—Producing successive corrugations or folds in the cloth, substantially in the manner described, for the purpose of feeding the cloth for the production of the stitches.

Also, the combination of the lifter spring I, the nipper spring K, the rod H, and the flattening spring P, they operating together and upon the cloth essentially as specified.

No. 17,186.—BRYAN ATWATER, of Berlin, Conn.—*Improvement in Sewing Machines*.—Patent dated May 5, 1857.—The downward movement of the needle through the cloth carries with it the thread, and as the needle rises, a portion of the thread slackens by the friction of the cloth, and the upper part of said slack is confined to the under side of plate *g*; as the needle rises further, the loop is gradually contracted by passing between the two pins *m*, (fig. 2.) At this moment the feed motion suddenly takes place, and brings the loop in the position represented in fig. 3, the eye of the loop being then nearly parallel to the cloth. At the next downward movement of the needle *a*, it passes through the loop, carrying through it the thread which is to form the next loop, and tightening the first loop.

The inventor says: I do not claim forming a loop for a chain-stitch, and holding it in position to receive the succeeding loop wherein a stationary shuttle is used, as in the patent of T. J. W. Robertson.

But I *claim* the arrangement described, by which I am enabled to keep the loop of the needle thread positively in position by guides alone, without the necessity of introducing a looper or any other device into the loop, or making the loop pass around a hook or fixed shuttle; that is to say:

First. The described arrangement of guides for forming the loop from the slack of the needle thread, and directing the same by an external operation to a position for the needle to pass through it, consisting of a stationary guide-piece *J*, a stationary notched plate or edge *g*, and two stationary guides *m m*, arranged as specified, in proper relation to each other and to the needle and the cloth, or other material to be sewed, and employed in connexion with a proper feeding movement of the cloth or material, to operate substantially as described; and in combination with the said contrivance, I claim the guide plate *j*, with its lip *l*, arranged and operating as set forth.

Second. Though I do not claim the dog *L*, operating as described in connexion with an elastic foot-piece *K* on the face of the cloth, as in the machine of T. J. W. Robertson, to produce the feeding movement of the cloth or other material to be sewed, I *claim* the attachment of the dog *L* to lever *M*, arranged and operated upon by a wiper *q*, on the driving shaft *E*; as set forth, to produce a quick or sudden feeding movement of the cloth or other material, which shall, at the same time, aid in throwing the loop in the path of the needle, as and for the purpose specified.

No. 17,930.—ABIAL C. HERRON, of Remsen, New York.—*Improvement in Sewing Machines*.—Patent dated August 4, 1857.—The engraving represents a bottom view of the mechanism for forming and taking up the loop. As the machine is operated, a reciprocating motion is given to the rod *m*, which, by means of its rack, imparts a reciprocating revolving motion to shaft *k*, by means of pinion *a*. The looping-hook *i* forms the loop on the thread carried through the cloth by the needle, said needle leaning during said operation against the circumference of the India rubber roller *t*, which is rotated by the motion of the needle. Thus the needle is held on one side by roller *t*, while the loop is taken up by hook *i*, thereby preventing any bending

of the needle; and as the needle rises, the roller presses the thread through the eye of the needle, and aids in throwing it from the needle on the side opposite to the roller, to facilitate the hook in catching the thread.

The inventor says: I do not claim a rotating hook which has a longitudinal or transverse motion in the direction of its axis, in addition to its rotary motion.

But I *claim* the hook *h* and roll *t*, arranged and operating in combination with the needle, in the manner substantially as described, for the purpose specified.

No. 16,382.—MILTON FINKLE, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated January 13, 1857.—The loop-former B is made to pass in the shuttle race C, just forward of the shuttle, and forms and enters the loop first. By this means the shuttle can enter and pass through the loop with ease. As soon as the shuttle gets nearly through, the loop-former B is withdrawn; then, when the needle is going down, the shuttle is separated from it, by the thickness of the loop former, and therefore the needle is in no danger of being broken.

Claim.—The construction and use of the loop-former for the purpose of parting the thread from the needle, so that the shuttle will be certain to enter in the manner described.

No. 16,387.—A. F. JOHNSON, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated January 13, 1857.—The loop hook F is attached to the sliding bar *g*, actuated by stud *h*, which, travelling in the cam groove *d*, vibrates hook F.

The inventor says: I do not claim the peculiar construction and arrangement of the mechanism described for driving and operating the machine, as I intend to make it subject matter of another application for patent.

I claim neither the set screw, nor a circular plate or cylindrical body rotating upon eccentric pivots, as new means for adjustment.

But I *claim* combining the hook when furnished with a lever or arm as described with the eccentric-headed screw *q* and the adjustable projection or screw *r*, for the double purpose of taking, first, the loop properly from the needle, and secondly, for actuating the hook at the proper time for the needle to take the loop from the hook.

No. 16,434.—JAMES E. A. GIBBS, of Mill Point, Virginia.—*Improvement in Sewing Machines*.—Patent dated July 20, 1857.—On turning crank handle E a vibrating motion is imparted to the rocking shaft C and needle head R, so that said needle head will ascend laterally when the handle is turned in an upward direction, and descend, in returning, the same path it followed up. The needle is guided, first, by cross bars I, and, after passing through the cloth on table *a*, it is guided upon the inclined plane of the stationary crochet hook M. The loop is formed by the needle passing the thread over the crochet point, where it remains until the needle, in its next downward motion, passes through the loop and draws it off hook M. The further motion

of handle E will bring cam F in contact with roller G of the tail-piece of cloth clamp X, and cause its elevation in front, the rigid feeding hook Y propelling the cloth one step when said clamp is raised.

Claim.—Making the chain-stitch with a vibrating needle in combination with a stationary hook.

No. 16,436.—ELIAS HOWE, jr., of Brooklyn, New York.—*Improvement in Sewing Machines.*—Patent dated January 20, 1857; England, July 26, 1848.—The needle employed in this machine is pointed at both ends, and has an eye at the centre of its length to receive the thread. This needle is seized alternately by two pairs of nippers D and D¹, which are situated at opposite sides of the cloth, and which alternately push the needle into the cloth and withdraw it therefrom. As the needle is forced through the cloth, and when arrived at its lowest point, it is withdrawn a slight distance, thus causing the thread to form a loop, which is seized by finger *a* of lever J, said lever turning on the fulcrum K and being operated by cam G and arms *l* and *h*. As the lever J and finger *a* move to the position represented in dotted lines, the latter draws the slack thread from the needle and tightens the stitch.

Claim.—Drawing the thread through the cloth by means of a finger, or its equivalent, acting in connexion with mechanism which passes the needle through the cloth, substantially as set forth.

No. 16,566.—JOSHUA GRAY, assignor to Himself and JOHN GAULT, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated February 3, 1857.—Attached to the under surface of the machine is a plate F, upon which slides a plate G; the bar H slides in a recess in plate G, and it carries a pin *g* that plays in the slot *h*, thus imparting the required motions to plate G and hook *c*, which latter is fastened to plate G. The hook *c* forms the loop, in combination with a vibrating needle. The bar H receives its vibrating motions from the eccentric that operates also this needle bar.

Claim.—The combination and arrangement of the plate G, and slide H, with their slots and pins, operating in the manner substantially as described, for the purpose of giving the required motions to the hook, as set forth.

No. 16,554.—SAMUEL F. PRATT, of Roxbury, Mass.—*Improvement in Sewing Machines.*—Patent dated February 3, 1857.—Arm *o*¹ of hook N turns on pin *s* screwed into a bevelled standard *t*, so as to allow the hook to move in a vertical plane up to and into the vertical plane of the needle B and seam, and back from said plane; said movements being diagonal to said plane, and being produced by the arm *o*² being acted upon by the curved plate *u*, extending from lower rocker arm I. When the needle is at its highest position, the thread will be cast in a loop over the hook N; when the needle descends, it passes into and carries the thread through the loop; the point *w* of plate *u* strikes now arm *o*² thereby withdrawing the hook. When the needle rises and the thread slackens, part *a*² of plate *u* pushes forward arm *o*²

and the hook through the slack in the thread. As the needle has risen above the cloth the feed motion takes place, and during the same the plate a^2 , in consequence of its peculiar shape, stops moving the hook until the point of the needle has again descended to the loop, when the operation will continue as above. The feed motion will be understood from the engravings.

The inventor says: I do not claim the particular motions of the feed bar K, in vertical and horizontal directions. But I *claim* the combination with the arm I of the spring f , the projections i l , the bent lever L, and its projection h , or their equivalents, the same being to produce the motion of the feed bar, in the manner as described.

I also claim moving the loop hook or looper N diagonally up to and away from the needle, substantially in the manner as specified.

And I also claim effecting the movements of the loop-hook N at the proper times, substantially in the manner as described, that is to say, by means of the plate u attached to the arm I, operating upon the arm o^2 of the looper.

No. 16,518.—ELISA ALEXANDER, of New York, N. Y.—*Improved Attachment to Sewing Machines*.—Patent dated February 3, 1857.

Claim.—Combining the mechanism of the guiding and conveying rollers a and c with the mechanism operating a sewing machine having an independent feed, in such a manner that the said rollers shall guide automatically the finished work away from the machine in a straight line, by revolving in opposite directions with a speed regulated by that of the machine

No. 16,609.—THOMAS J. W. ROBERTSON, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated February 10, 1857.—The operation of this device will be understood from the engravings.

Claim.—The spiral groove in the needle leading upward from the eye on one side, in combination with the looper b , in the manner and for the purpose described.

I also claim the loop guide c in combination with the looper for laying the loop, as described.

I also claim the guard pin e , or its equivalent, for the purpose set forth.

No. 16,713.—JOSEPH W. BURNHAM, of Hartford, Conn.—*Improvement in Sewing Machines*.—Patent dated March 3, 1857.—The cutter a is attached to the under side of the machine in such a way that by a quick motion of the hand on the pad o , when the machine stops its operation, the cutter will cut the thread below the work, and leave the thread in readiness to commence sewing in another place.

Claim.—The employment on sewing machines of the mechanism hereinbefore described, so as to cut or clip the thread on the under side of the work.

No. 16,710.—CHARLES D. BELCHER, of Charleston, S. C.—*Improvement in Sewing Machines*.—Patent dated March 3, 1857.—The brake piece b is firmly secured in its holder a , but may be adjusted by slot

and screw x , so that it may be brought nearer to the hook as its edge wears away. The periphery of the hook is sufficiently pressed against the brake to prevent the threads from passing under it, by means of spring m ; this spring is attached to the frame of the machine and presses against the vibratory arm D. The brake is attached to the end of this arm D. The brake is separated at the proper moment from the periphery of the hook by means of cam d pressing against stud h upon arm D. l is a small friction roller at the end of the stud.

Claim.—The improvement on the patents of A. B. Wilson described, consisting in the application of an unyielding brake b , to hold the loop upon the revolving hook B, and imparting a positive movement thereto, in such a manner as to separate it from and bring it to the periphery of the hook at the proper moment, substantially as specified.

No. 16,850.—T. J. W. ROBERTSON, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated March 17, 1857.—The engraving and claim show the nature of this invention.

Claim.—The inventor says: I do not claim the broad idea of pulling the cloth through a sewing machine, independent of any tool or contrivance for so doing.

Neither do I claim the broad idea of moving cloth by means of hooks in all kinds of machines; for an example of such a movement is seen in the weaving temple of J. C. Tilton, patented 1855.

But I *claim* feeding the cloth in sewing machines by means of a hook, having one or more points, constructed and operating substantially as described.

No. 16,914.—JAMES E. A. GIBBS, of Mill Point, Va.—*Improvement in Sewing Machines.*—Patent dated March 31, 1857.—The operation of this apparatus is as follows: Supposing the needle of a lock-stitch machine to have passed through the cloth, down between the hooks 1 and 2, and to be about to withdraw, leaving a loop under the cloth, the hook 1, which is now placed in readiness to enter the loop, is caused to revolve and twist the thread a turn so as to pass the loop of the needle thread around and over the thread case A, when the needle is again brought down; the other hook 2 then faces the next loop presented, and by the return revolution twists the thread a turn or part of a turn in the contrary direction.

Claim.—1st. Making a series of lock-stitches with a double hook, reciprocating its motion of a single revolution or part of such revolution, substantially as herein set forth.

2d. In combination with a sewing machine the challon thread case A, of a spherical, oval, or any similar form, for containing a ball of thread having no fixed axis of revolution.

3d. Also attaching to the globular thread case A a plate B, or its equivalent, furnished with two hooks 1 and 2, which are placed symmetrically in the manner specified, and combining the whole with any suitable mechanism that will impart thereto a reciprocating motion of a single revolution, or part of such revolution, when the axis of revolution is fixed, substantially as set forth.

No. 17,049.—WILLFORD H. NETTLETON and CHARLES RAYMOND, of Bristol, Conn.—*Improvement in Sewing Machines*.—Patent dated April 14, 1857.—The press bar *u*, swinging on fulcrum 19, is kept down on the cloth by spring 20, and can be raised for inserting the articles to be sewed; the under side of said press bar, on each side of the slot in which the needle and feeding points operate, is formed with grooves 21 diverging from each other as shown at fig. 1, so that, as the cloth is fed along, the divergence of the grooves stretches the seam widthwise, rendering the same flat, and preventing any puckering or wrinkling by the needle feed points. The looper *r* is used when the machine is worked with two threads, and the looper *v* when operated with one thread.

The inventors say: We do not claim a single or double loop stitch, as that is well known; neither do we claim a needle feed, as this has already been used; neither do we claim the slide cam *o* and slot 11 in themselves, as these have before been used; and we are well aware that diverging grooves have been used for stretching the cloth widthways in shearing and similar machinery; but we are not aware that the press bar has ever before been grooved in the manner shown, to prevent the needle puckering the cloth as it is fed along in the manner shown.

What we *claim* is forming the face of the press bar next the material to be sewed, with diverging grooves to keep the cloth stretched widthways and prevent puckering under the operation of the needle, substantially as and for the purposes specified.

Also the looper (*r* or *v*) formed with the notch 13, into which the needle enters to insure the taking of a loop, when the said looper is combined with the slide *o* and slot 11, or their equivalents, for giving the necessary sideways motion for the purposes and substantially as specified.

No. 17,366.—SOLOMON B. ELLITHORP, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated May 26, 1857.—By revolving cam-wheel B, the needle C and its thread are forced through the cloth on table L; and the point of the needle coming in contact with slide H, the latter actuates lever I and loop former J, which catches the thread carried through the cloth, and forms it into a loop over the point of the bobbin M, through the action of spring-catch N, the bobbin M being alternately retained and released by the two arms of the magnet K, as the thread is drawn between the bobbin and the magnet.

Claim.—The attachment of the primary moving power to give motion to the needle in direct communication with the needle stock, and in vertical line with the needle.

No. 17,400.—THOMAS S. WELLS, of Utica, N. Y.—*Improvement in Sewing Machines*.—Patent dated May 26, 1857.—This invention relates to that class of sewing machines in which the sewing is effected by a needle with a point at each end passing entirely through the cloth to be sewed, from opposite sides alternately. The protruding portion of the finger *l* is caused by the rotation of the wheel

O with the shaft E to pass between the point of the needle and the table A, at the precise moment when the needle has been withdrawn to the greatest distance from the cloth on the under side, and catching hold of the thread forms a loop in it, and by its continued revolution draws it through the cloth, doubling it and winding it upon the periphery of the wheel O till the stitch is drawn tight, when the drag of the thread on the finger *l* overcomes the force of the spring *p*, and allows the finger to fall back far enough for it to slip off, as represented in dotted lines in fig. 2.

The inventor says: I do not claim the invention of a two-pointed needle with an eye in the centre, nor a two-pointed needle with a slit or fissure to receive and pinch the thread. Nor do I claim the employment of a revolving finger for the purpose of drawing the thread through the cloth, or any other device described in the specifications of Hezekiah B. Smith or J. J. Greenough. But I *claim*, first, the employment of a wheel *o*, to carry the finger L, and take up the slack of the thread on its periphery as it is drawn through the cloth in tightening a stitch, substantially as and for the purpose specified. Second, enclosing the wheel *o* within a case R, substantially in the manner described, to prevent the thread slipping off the wheel, and to guide the slack while it is being drawn through the cloth in the production of the successive stitches as set forth.

No. 17,427.—JAMES E. A. GIBBS, of Mill Point, Va.—*Improvement in Sewing Machines*.—Patent dated June 2, 1857.—The needle arm N is pivoted at *p*, and receives a vibratory reciprocating up and downward motion by a guide wheel W, in the eccentric groove of which the tail of the needle arm plays. The shaft S, which is attached to the centre of the disk C, has a rotary motion imparted to it together with its hook H, which is attached to the front end thereof.

When the needle arm has reached its lowest point of stroke, the hook H is just facing the loop which the needle has brought through the cloth; and when the needle next rises, the loop is loosened and opens at the same moment that the hook advances and penetrates the loop as represented in figure 2; the loop now slips off the hook and is caused to lodge in the angular recess *r*; the loop is then twisted by the spur or cast off *x*, which is so arranged in relation to the hook and angular recess *r*, that the loop is spread for the hook nose to pass through on taking a fresh loop from the needle. At this moment the hook has two loops engaged; the fresh loop at the nose and the preceding loop which now bears against the convex part of the hook figure 2. The next motion of the hook will allow this latter loop to slip off entirely from the hook, as shown in figure 3, and is drawn tight by drawing open the new loop. This series of operations is repeated at every revolution of the hook.

Claim—The revolving hook described, constructed and arranged in relation to and operating in connexion with the needle, as set forth.

Also, when sewing with a single thread, interlacing or twisting the threads of the loop after passing the cloth to be sewed, and before taking a fresh loop, substantially in the manner and for the purpose specified.

No. 17,508.—DANIEL HARRIS, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated June 9, 1857.—When the needle with its thread *o*, after having completed its downward motion, commences to rise, the beak point *a* is caused to enter between the thread and needle before the thread has any chance to twist. The thread, as the beak advances by the motion of arm C, is laid partially around the beak, and is drawn over thread catch *x*; and when the plate projection *p* is brought against the end of spring *h*, the beak spreads the opening between the two portions of thread, and the needle on its descent passes through the opening. When the needle in its next descent has penetrated the cloth and its point has just entered the loop, then the front of bar C begins to rock back, causing the spring *h* instantly to depress the plate *b*, so as to slacken the thread, which release allows the needle in its further descent to draw its thread in part from the slack of the preceding loop.

Claim.—The mechanism for forming and interlooping the stitches, consisting of the beak *a*, the catch *x*, the plate *b* and its projection *k*, the spring *h*, and the needle, when constructed, arranged, and operated together in the manner as set forth.

No. 17,571.—DANIEL HARRIS, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated June 16, 1857.—As the crank shaft G is rotated, a vibrating motion is imparted to lever E and connecting rod *o*, and the sliding plate *m* is vibrated in its ways *i k*, resting upon plate *p*. When the plate *m* begins to move forward, the pin *n* is in the front part of the oblique slot of the plate *m*; and as said plate moves forward, it causes the pin *n* and looper rod *c* to move forward until the point of the looper reaches its most outward position. The plate *m*, as it continues to move against pin *n*, causes the looper rod *c* to turn on its bearings until stud *q* strikes against bed *p*, and to stop the rotary motion. As the plate next moves back, projection *r* strikes against stud *q* and rotates the looper, so that the pin *n* shall again enter the rear part of the slot. The effect of these movements is, that when the needle B and its thread are upon their downward course and the point of the needle has just penetrated the cloth, the looper is at its most forward position, as seen in fig. 6, its nose *y* being advanced past the path of the needle, its loop spreader *t* holding the loop of thread open in said path, and the slot *s* also in said path. As soon as the needle has penetrated the cloth, it enters the loop spread out under it; and as it continues, the loop rod rotates until the spreader *t* is turned at right angles to the table, when it is drawn back horizontally through its bearings, the needle ascending until the loop is fully pushed back. When thus pushed back, the nose of the looper is just against the side of the needle and in rear of the thread on the back of the needle; and as the needle begins to rise, the thread slacks, and the nose moves forward between the thread and the needle; and as the point of the needle rises from under the table, the spreader, having the thread cast over it, rotates and spreads the thread ready for the next descent.

The inventor says: "I am aware that a looper or hook has been before made and used for effecting the same purpose as my looper, namely, to take the loop from the side of the needle and lay it open under the point thereof, by having reciprocating horizontal and rotary movements imparted to it. I therefore do not claim these peculiar movements of a looper.

Neither do I claim moving a hooked needle vertically through a fixed bearing up through a feed bar, to take the thread from the cloth, as my looping apparatus is not for such purpose.

I *claim* the arrangement of the mechanism described for operating the reciprocating looper, and giving its rotation or partial rotation, for the purposes set forth; that is to say—

I claim the combination of the inclined slot plate *m*, the pin *n*, and the stud *q*, or their equivalents, they operating as above described to produce the proper movements of the looper.

No. 17,717.—WILLIAM SAGE, of Durham Centre, Conn., assignor to HENRY SAGE, of Berlin, Conn.—*Improvement in Sewing Machines*.—Patent dated June 30, 1857.—The loop-former, consisting of the parts *a* *b*, is operated by a cam on the driving shaft acting on lever *L* and slide *N*; and said cam is so formed that when the needle *J* is in the highest position, the loop-former will be in the position represented in the engraving. This is attained by the incline on part *a*, figure 3, of the loop-former striking pin *g*, which, as the former advances and the needle rises, forces the point of the loop-former upward to relieve the loop as the needle approaches its highest position; at the same time the heel of the jaw strikes the pin *h*, which opens the point of the loop to allow the needle in its descent to enter the loop. As the needle completes its descent, the loop-former is drawn back and releases the loop. As the needle commences to rise, the position of plate *k* insures such a position of the loop that the loop-former will enter and secure it as it returns against the plate. As soon as the point of the needle *J* rises above the loop-former, the spring *M* is caused to press the loop-former up against plate *k*, and to push it away from the needle; and at the same time the points of the loop-former are raised and spread to open the loop by the pins *g* and *h*, the raising of the points of the loop-former allowing them to spread and open the loop without strain upon the thread. These parts remain in this position till the needle descends into the loop, when the points of the loop-former descend and retire, and the plate *k* returns to the needle, as before described.

Claim.—1st. Combining the spring top plate with the needle and loop-former, as described, for the purpose set forth.

2d. Giving the point of the loop-former an upward motion as the needle rises, and the point of the loop-former expands to form the loop, substantially as described and for the purpose stated.

3d. The construction of the loop-former and its arrangement in connexion with the trip *h* and slide *N*, by which it is made to open to spread the loop for the reception of the needle, and close to enter the next loop, as set forth.

No. 17,679.—ELIAS HOWE, jr, of Cambridge, Mass., and WILLIAM R. BLISS, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated June 30, 1857.—The needle E is first inserted and retracted sufficiently to open the loop; the shuttle T is then advanced sufficiently to insert the point c thereof into the loop, and for the finger V to enter the groove e in the shuttle. The needle is then withdrawn to the surface, and the shuttle is thrust forward through the loop, enlarging it sufficiently to permit its passage by drawing through the needle thread; the shuttle thread is then held, and the stitch is drawn up by the retraction of the needle arm D² in the usual manner.

Claim.—1st. In connexion with the mode of forming a seam by means of two threads, as described, we *claim* the seizing and holding of the loop of the needle thread after it is inserted, by means of the point c of the shuttle and finger V, or their equivalent, and the withdrawing of the needle from the material to be sewed before the shuttle thread is passed through the loop, substantially in the manner and for the purpose described.

2d. We claim the combining and arranging of the mechanism which works the shuttle thread and the baster H, or its equivalent, with the standard C, and in connexion therewith so arranging the mechanism which works the needle thread as that they shall co-operate and form the seam when the standard is inserted in objects of a tubular form, as described.

No. 17,744.—E. T. LATHBURY, of Buffalo, N. Y.—*Improvement in Sewing Machines*.—Patent dated July 7, 1857.—When the needle has been protruded through the cloth and retracted a little to slacken the thread on one side of the needle to commence the formation of the loop, the looper, by the movement of lever K, is caused to advance and pass between the needle and the slack thread with the shorter finger i, next the needle; and as the needle is withdrawn from the cloth, the loop is left extended on the outside of the looper, which moves onward so far, that when the needle is withdrawn upward from the side of it, a lateral movement of the looper will bring the open space between the two needle-pointed fingers i and h directly under the needle with the loop extended around them; so that the needle in its next passage through the cloth will pass between the two fingers of the looper, and the loop being extended in an open condition around them, the needle cannot fail to pass through it.

The inventor says: I do not claim the employment of a looper with two fingers, or a thumb and finger, as described in the patents of W. H. Johnson and L. Jennings, which fingers, or thumb and finger, operate differently to the fingers of my looper to produce a different stitch.

But I *claim* the looper composed of two elastic pointed fingers h i, and operating in combination with the needle, so that the needle passes through the looper while the loop is extended upon it, and then escapes from it by opening its point as the looper is withdrawn from the loop, substantially as and for the purpose specified.

No. 18,000.—WILLIAM C. WATSON, of New York, N. Y., assignor to Himself, GEORGE H. WOOSTER, and IRA W. GREGORY, of the same place.—*Improvement in Sewing Machines*.—Patent dated August 11, 1857.—The engravings represent bottom views of the loop-forming apparatus. In figure 1, the needle *e* is in its downward stroke; and as the needle retreats the loop is formed, and cam *x*, at the same moment striking roller *a*¹, moves hook *b* forward, which takes the loop up, as seen in figure 2. The hook *b* and hold-fast *c* both retreat now; the loop is spread, so as to insure the passing through it of the needle *e*.

Claim.—The improved device for seizing the loop and holding and properly presenting it for the passage of the needle, consisting of a vibrating hook *b*, in combination with a gripper or hold-fast *c*, so arranged and operated as alternately to close upon the loop after being engaged by the hook to draw back the said loop, and to release the same after the passage of the needle through, in the manner described.

No. 18,071.—HENRY BEHN, of New York, N. Y., assignor to Himself and THOMAS SEWELL, of the same place.—*Improvement in Sewing Machines*.—Patent dated August 25, 1857.—By turning crank *A* the needle has a vertical vibrating motion imparted to it, and the cams *c* and *c*¹ are rotated, causing the loopers *a* and *a*¹ to move towards and from each other. When the needle is at the bottom of its stroke, the half looper *a* advances, so that its point passes between the thread and the needle. The other half looper *a*¹ now also approaches, and catches hold of the thread immediately over the first looper, in like manner, from the opposite side, and carries said thread also along with it. As the needle now rises, the feed of the cloth takes place in the direction of the arrow, (figure 3,) the loop is pulled along and spread for the needle to pass through; the needle then recedes, and another loop is caught and spread.

Claim.—The specific looping device herein set forth, consisting of two pointed bars—the one moving in a plane above the plane of motion of the other, and operating in combination with the needle in such manner that the loop is formed and held open by bending the thread out of a straight line in opposite directions, as described.

No. 18,068.—WILLIAM WICKERSHAM, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated August 25, 1857.—The thread for the sewing operations of this machine is contained in the shuttle *G*, which is operated by lever *F* and cam *J*. The different stages of the needle in making the stitch are represented in the engravings. The needle passes through the cloth hooks into the stretched thread below the cloth, (fig. 2,) draws up the loop, (fig. 3,) and passes the loop through the cloth, (fig. 4,) while the shuttle passes into said loop, and through the same, as represented in fig. 5, where the needle becomes disengaged, and rises while the shuttle stretches the thread for the next operation, thereby producing a stitch, represented in figs. 6 and 7.

Claim.—A fast stitch made by one thread, which is formed by having the loop or double of the thread pass through from one side

of the cloth to the other, and back again in another place to the first side of said cloth, and around the same thread of which the loop is formed by means of a shuttle, carrying said thread through said loop, substantially as specified.

Second. I claim a thread guide, with a notch or opening *e* in one side of it to receive the thread, and formed and arranged substantially as described, so that the thread may pass into it when said thread is to be guided into the eye or hook of the needle, and pass out of said notch in the thread guide at other times.

Third. I claim the use of a double-hooked needle, as described, in taking the thread both ways through the cloth—one way or up through the cloth by means of one hook, and the other way or down through the cloth by means of the other hook of the same needle, all substantially as above described.

No. 18,069.—WILLIAM WICKERSHAM, of Boston, Mass.—*Improvement in Sewing Machines*.—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings and the description No. 18,068.

Claim.—First. The method of taking up the slack thread above the cloth by means of the shuttle—that is, when the needle descends after having taken the thread up through the cloth, and to its greatest distance above said cloth, drawing down through the cloth the end of the thread connected with the shuttle by means of the shuttle receding from the needle as the needle descends, thereby preventing the liability of the thread's getting under the point of the needle, as said needle passes down into the cloth, by thus keeping said thread straight or nearly so, until said needle point is so near said cloth that there is no further liability of the thread's passing under it.

Second. I claim the formation of a seam of one thread which cannot be unravelled, of stitches, each of which is made by having the loop or double of the thread passed through from one side to the other of the cloth, and back again in another place to the first side of said cloth, and a loop formed by means of a hook needle, and then by having the same thread of which said loop is formed passed through said loop, and the loop drawn up to the cloth around the thread thus passed through it by means of the shuttle, as specified.

No. 18,072.—SAMUEL LARKIN, of Bridgeport, Conn., assignor to THE WHEELER & WILSON MANUFACTURING COMPANY, of same place.—*Improvement in Sewing Machines*.—Patent dated August 25, 1857.—When a spool of thread is to be applied to this apparatus, the thimble *S* is withdrawn from the spool spindle *e*, the jaws *d f* are separated, the spool is inserted, and the thimble *S* is replaced. The tension of the thread is adjusted by operating nut *P*.

The inventor says: I am aware that springs or spring frictional brakes of various descriptions have been used to control the tension of the thread in sewing machines, and therefore I do not claim the employment of a spring for such a purpose.

Nor do I claim any arrangement or combination of a spring and other devices which operates upon a different principle from the combination devised by me.

But I *claim* a spring force as constructed, substantially as herein set forth, in combination with a spool spindle, or equivalent means of supporting the spool.

No. 18,102.—ORSON C. PHELPS, of Rochester, N. Y.—*Improvement in Sewing Machines*.—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the use of a spring immediately connected with the needle, or with the socket for holding the needle, or any spring attachment for a similar purpose not directly attached to the needle bar, as seen in the patent of I. M. Singer and others.

But I *claim* constructing the needle bar of sewing machines with a cap or helmet D on its top, and a spring b, or other elastic material which is equivalent in its effect, as India rubber, air, &c., interposed between the parts, for the purpose of giving a yielding bearing to the thread, both in drawing in the stitch, and when the shuttle passes the loop; whereby a very fine thread may be used without breaking, and a better seam produced, in consequence of the even tension of the thread and gradual drawing in of the stitch, as described.

No. 18,285 —EDWARD A. JENKS and JOHN UNDERWOOD, of Lowell, Mass.—*Improvement in Sewing Machines*.—Patent dated September 29, 1857.—The frame and table, as well as the wheel A, and crooked lever B, by which motion is communicated to the needle, may be of any ordinary form. Upon the table C rests the foot of a curved sheath R, and within this sheath slides a feed strip S, the end of which also rests upon the table. The sheath has a fork shape at the end so as to bestride the needle N, whilst the feed strip S has a slight notch, which comes up to the needle when the strip moves forward, to push the cloth along. This sheath is supported by the arm M, and has two braces, T and U. As the lever B raises the needle, it also carries upward the pin O, until the latter strikes the screw P, which is firmly connected with the feed-piece. The plate Q is also attached to the feed-piece. The action of the pin O is to force the screw P upward, carrying the feed-piece S along the sheath, and thus give motion to the cloth upon the table; at the same time the action of the pin tends to raise the sheath, so that the foot of the sheath does not press upon the cloth. As the lever B carries the needle downwards, the pressure against screw P is relieved, and the pin C soon reaches the lower end of the slot in plate Q, and then pulls the feed-piece back in the sheath; at this moment, when the feed-piece is being drawn back, there is an increased pressure on the cloth, by the foot of the sheath, so as to hold the cloth more firmly. The foot of the sheath is smooth, and the lower end of the feed-piece is both smooth and blunt, so that no injury is done to the fabrics whilst being sewed. Below the table is a pair of rollers D D turning on pivots E E. The pivots E E are supported by adjustable slides. The looper H (fig. 3) is attached to the back part of one of the rollers so as to turn with the roller, which also carries in front a spring I. This spring presses the lower end of the looper against the inclined plane K.

The inventors say : We are aware that a looper has been moved by the action of the needle, but in a way entirely different from our invention.

We disclaim the rigid guide and feed-piece, as employed in the patent of J. B. Woodruff, dated December 23, 1856 ; also the use of a spring presser for holding the cloth, as this device has been long in use in sewing machines

We *claim* the arrangement of the spring feed-piece S, with its pressure guide or sheath R, substantially as described, for the purpose set forth.

2d. We also claim the rollers D D¹ and looper H, as arranged and operating in combination with the needle, for the purpose specified.

No. 18,371.—WILLIAM C. WATSON, of New York, N. Y., assignor to Himself, GEORGE H. WOOSTER and IRA W. GREGORY, of same place. *Improvement in Sewing Machines*.—Patent dated October 6, 1857.—The nature of this improvement consists in making a looper for single thread or chain-stitching sewing machines, the object aimed at being the obtaining of greater certainty of action with simplicity of parts. The principle of this looper lies in the peculiar combination of two hooks, one of which is stationary, the other movable, which latter is called by the inventor "the loop-carrying hook," and which is to catch and carry the loop to one side, where it is held open for the passage of the needle by the combined action of both hooks.

In the drawings fig. 1, is a plan view of the device as seen from beneath the bed, or table of the machine, and fig. 2 is the same, but showing the looper in a different position.

Claim.—The inventor says : I *claim* the specified device set forth, being the vibrating hook operating to catch, spread, and carry the loop upon the stationary hook, where, by the action of the bolts, the said loop will be held securely open in the path of the needle, when the feed is given so as to insure certainty of action without extending the loop more than is requisite for the passage of the needle through it.

No. 18,350.—WILLFORD H. NETTLETON and CHARLES RAYMOND, of Bristol, Conn.—*Improvement in Sewing Machines*.—Patent dated October 6, 1857.—The nature of this improvement consists in a peculiar construction of feed-motion to move the material that is being sewed.

In the drawings, *a* is the metallic bed ; *b* the box containing the cam *d*, which is set on the shaft 1 and revolved by means of a fly-wheel and handle ; *e* is a bent lever set on the fulcrum *x*, and given a vibrating motion by means of the cam acting on a stud or the short end of said lever. In the operation of the machine, the clamp *o* is forced down, the bed *q* yields, and, as the cloth and bed descend, the serrated edges of the fingers *r* take the cloth, and, standing in an inclined position, give more or less feeding motion to the cloth, according to the amount which the spring-bed *q* and the clamp *o* are pressed down by the lever *f* and cam *n*.

The inventor claims the spring-bed plate *q*, in combination with the pressure clamp *o* and inclined spring *r*, to feed the cloth substantially as specified.

No. 18,359.—E. HARRY SMITH, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated October 6, 1857.—The nature of this invention will be understood by an examination of the claim and drawings.

The inventor says: I *claim* a cylindrical annular shuttle constructed as described, in combination with the driver, for holding it in place and driving it around. And, in combination therewith, I claim imparting to the needle and its thread a constant upward movement while the shuttle passes through the loop, so as to lift the shuttle completely off its bearings, and thus avoid all friction of a sliding shuttle, and the use of oil thereon.

I also claim, in combination with the above continuous movement, the two thread guides, as arranged and made to operate together with respect to the endless movement and shot of the shuttle, essentially in the manner set forth and represented, for the purpose of causing a positive withdrawal of the loop from the shuttle at the moment the latter has passed through it.

I further claim the employment of the smaller or auxiliary foot to hold the cloth to the feeding teeth in their forward movement, and to release the pressure therefrom when they return, substantially as set forth.

Finally, I claim the use of a series of laterally reciprocating teeth, to carry the cloth along in their forward movement, in combination with a series of vertically acting teeth, to assist in holding the cloth and counteract the retrograde tendency in the return of the feed, when such teeth act independently of the foot to which they are attached.

No. 18,470.—T. J. W. ROBERTSON, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated October 20, 1857.—This improvement consists, first, in a new stitch called the “double back-stitch,” which is made as follows: Pass a loop of thread through the fabric to be sewed; then pass through the fabric and through the first loop (from the same side of the fabric as the first loop) another loop from another thread; when this is done, pass through the fabric another loop from the first thread through its own first loop and the loop of the second thread, and the stitch is made.

The second part of the invention consists in a machine for making the foregoing described stitch, by means of two needles working at such angles to each other that they cross beneath the table and work through each other's loops.

The inventor says: I do not claim broadly the employment of two needles for the purpose of sewing cloth; for they are seen in the patents of O. Avery, October 19, 1852, to May 9, 1854.

I *claim*, first, forming a seam by passing a loop of thread through the fabric to be sewed; then passing through the fabric and through the first loop a loop taken from another thread from the same side of the material as the previous loop; then passing through the fabric another loop from the first thread through its own first loop and the loop of the second thread, thus making a line of stitching which I call “double-back stitching.”

Second. The arrangement and combination of the needles *i* and *j*, or their equivalents, substantially as described.

No. 18,511.—JOHN W. MARSH, of Oxford, Mass.—*Improvement in Sewing Machines*.—Patent dated October 27, 1857.—The operation of this machine is for sewing a welt seam; the slide A is drawn back and the work placed thereon, the guard E being set, if used; the end of the work being held under the foot-piece M and the under pad H; the knife L being set the distance from the needle that it is wanted to trim the work; it works with the needle or awl, cutting or trimming the work as fast as the slide is fed along.

The inventor says: I do not claim the use of a slide for a feed motion, irrespective of its form and accompaniments. But I *claim* first, the combination of the slide A, provided with the slots C D, guard E, and pad H, with the foot-piece M, with its guide N and slots, arranged and operating substantially as described.

I also claim the combination of the slide A and foot-piece M with the knife and needle-holder, as constructed and arranged for securing and trimming the work while being sewed in its passage through the machine.

No. 18,522.—SYLVESTER H. ROPER, of Roxbury, Mass.—*Improvement in Sewing Machines*.—Patent dated October 27, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim*, first, the feeding of the cloth alternately in opposite directions, for the purposes specified, and in the way described, or in any equivalent manner.

Second. I claim the use of the two plates *e e*, for the purpose of giving uniformity to the length of the stitches by preventing the wearing of the lever *g*, as described.

Third. I do not claim the hook *r*, for the purpose of taking the thread through the cloth, as has before been used; but I claim the yielding force of the hook *r*, which will allow said hook to remain stationary if the thread does not readily pass through the cloth until the needle is withdrawn, as described.

Fourth. I do not claim the double-hooked needle, or the use of it, in taking the thread both ways through the cloth; but I claim the combination of the double-hooked needle and the hook *r* for the purpose specified, all substantially as described.

No. 18,566.—C. H. ANDRUS, of Goshen, N. Y., assignor to Squire LEE, of Goshen, N. Y.—*Improvement in Sewing Machines*.—Patent dated November 3, 1857.—A is the principal feeding plate, and C the lever to which it is attached, and through which it derives its reciprocating motion. *a* is a slot in the feeding plate A to receive the supplementary feeding plate. B is the supplementary feeding plate fitted to rise and fall easily within the slot *a*, and furnished with a projection *b* at each end to prevent its dropping entirely through the slot *a*; the said projections, however, allowing its serrated lower surface to drop some distance below the lower surface of A. This feeding plate B contains a slot *c*, extending in a direction parallel with the feed movement for the needle to work through. *d d'* are two springs attached to the feeding plate A and its leg C, and pressing downward upon the plate B. *e* is a guide from the spring *d*.

The inventor says: I am aware that in the sewing machine of A. B. Wilson, patented 1854, a tri-pronged spring pressure pad is employed. The central prong of this pad presses or holds the cloth against the periphery of the feed wheel. I disclaim the spring pressure pad, and also the holding of the cloth against the feed-wheel by a spring. In the device of said Wilson the pressure pad is stationary, the feeding of the cloth being accomplished by a serrated wheel.

I am also aware that in the device of E. H. Smith, 1857, the pressure pad is slotted, and has a separate spring within the slot which presses the cloth upon a horizontally moving dog. The cloth is fed by said dog, which is below the table.

I do not claim the employment of two foot-pieces or feeding plates in any other way than as described; but I *claim* the employment of a supplementary serrated feeding plate B, fitted within a slot in the principal feeding plate, and provided with shoulders *b b*, and being controlled entirely by springs *d d'*, applied between it and the principal feeding plate, so as to operate as described.

No. 18,605.—E. HARRY SMITH, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated November 10, 1857.—A small cavity 1 is formed on one side of the centre of the shuttle *a*; into this cavity a bobbin *b* is inserted, or a cap. On the same side of the shuttle, opposite the bobbin cavity, the shuttle is chamfered off, and a small nose or hook 2 formed in its edge to catch the loop from the needle. The centre of the shuttle is slightly raised so as to form a small disk or button 3, which receives the loop of thread from the body of the shuttle after the bobbin has passed through, and retains it until the rotation of the shuttle releases it at the proper time, which is done by having one side cut away, as shown in the engravings.

The inventor says: I do not claim a shuttle from which the loop of needle thread is drawn at every stitch, as shown in the patent of Joseph Bond, jr., of May, 1855.

But I *claim* the discoidal shuttle, constructed as set forth, and made to control the loop of needle thread, substantially in the manner described and represented.

No. 18,639.—N. W. HARRINGTON, of Jamestown, N. Y.—*Improvement in Sewing Machines*.—Patent dated November 17, 1857.—This invention consists in a looper of novel construction, operating, in combination with an eye pointed needle, to sew what is known as the "chain stitch" with a single thread. The claim and engraving will further show the nature of the improvement.

Claim.—The looper, composed of three fingers *s t w*, arranged and operating together, in combination with the needle, as described.

No. 18,732.—JOEL CHASE, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated December 1, 1857.—In this invention the cam wheel E is made with a waved or undulating rim to give motion to the needle arm G. The needle arm is hung in a socket in the rock shaft H, which is hung in bearings in the frame. This needle arm fits closely into the socket, and is kept from turning by fric-

tion any further than it is compelled to turn by the arm I, which is attached to the lower end of the part which fits into the socket. This arm is restricted in its motion by the stop J, and may also be restricted in its opposite motion by the lever K. It is also kept from moving more than a proper distance by the stop L in the socket.

Claim.—The combination of the lever G, when hung on an axis in the rock shaft, with the lever I, when the motion thereof is limited by the stops in the manner set forth, for the purpose of imparting the feed motion to the needle.

No. 18,793.—GEORGE FETTER, of Philadelphia, Pa., assignor to Himself and EDWARD JONES, of Philadelphia, Pa.—*Improvement in Sewing Machines.*—Patent dated December 1, 1857.—This invention relates to that class of sewing machines which produces the double lock stitch, and consists in a peculiar and simple mode of imparting a feed movement to the pressure bar for the reciprocating movement of the needle bar.

The inventor says: I do not claim exclusively imparting to the pressure bar a lateral motion from the reciprocating motion of the needle bar.

But I *claim* the needle bar H, with its adjustable lever L, in combination with the slide I and its projections *n* and *j*; the whole being arranged for joint operation substantially in the manner and for the purpose set forth.

No. 18,817.—WILLIAM H. LAZELLE, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 8, 1857.—Within the ring E (within which this apparatus is set) the plate B is hinged at right angles to the shaft. The hole in the plate is large, so that the plate can vibrate without touching the shaft. Upon the face of the plate are two knobs, or semi-cylindrical bosses G, which are made smooth and rest against the face of the disk A.

The inventor says: I am well aware of the common use of the cam movement for vibrating the needle arm of sewing machines; I therefore distinctly disclaim the use of a cam for operating the needle arm.

But I *claim* the disk B, to which the needle arm is rigidly attached, provided with its bosses or friction surfaces G G, in combination with a plane-faced disk cam A, arranged and operating in the manner and for the purpose specified.

No. 18,834.—W. C. WATSON, of New York, N. Y., assignor to Himself and GEORGE H. WOOSTER, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

Claim.—First. The employment of a stationary needle combined in such manner with a reciprocating table or cloth-holder, that the protrusion of the needle through the cloth or material being sewed is caused by the movement of the said material, as and for the purpose set forth.

Second. Operating the looper by attaching it to a lever which is carried by the reciprocating table or cloth-holder, and which derives mo-

tion from the movement of the said table or cloth-holder through an offset on one of its edges, working in contact with the driving shaft, or its equivalent, as described.

Third. The combination of the reciprocating table or cloth-holder, the oscillating feed-plate M, the stationary bar N, and the spring q, the whole operating as described, to produce the movement of the cloth in the direction to produce the seam.

No. 18,823.—CHARLES MOORE, of Buffalo, N. Y.—*Improvement in Sewing Machines*.—Patent dated December 8, 1857.—In operating this invention, when the cam wheel A is made to revolve, the cam will press the roller B inwardly, thereby moving a series of levers N N M and L, in the direction to move the looper back from the needle, and also to expand the spiral spring T. As the looper is thus carried back from the needle, by the acting of the cam upon the series of levers, the lever I strikes the stop P² before the looper has passed its limit backward, whereby the looper is turned so as to bring the tines of the fork perpendicular to each other. At this point the cam moves off from the roller, and then the spiral spring moves the looper in the opposite direction, the tines of the fork in that position passing between the needle and thread. The lever I then strikes the stop P, and causes the fork to make a quarter turn, and thereby carries the thread for the loop; so that when the needle is driven down through the cloth, it passes behind the thread and between the tines of the fork, thereby forming the loop. As the looper recedes, the needle serves to slip the thread from the fork, and the stitch is perfected.

Claim.—The specific mechanism described for forming the loop, namely: the fork G, trotch J, lever I, and stops P and P², arranged and operating in combination in the manner and for the purpose specified.

No. 18,880.—HENRY BEHN, of New York, N. Y., assignor to Himself and THOMAS SEWELL, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated December 15, 1857.—This improved machine consists of an apparatus for making a three-threaded stitch. In constructing it, on a proper platform or table of metal is affixed an upright standard with a horizontal arm extending out therefrom above, and parallel with the table. At the end of the horizontal arm there is a slide which works up and down in a vertical line, to the lower end of which the needle *a* is attached, the needle being of ordinary form, with the eye near the point; at the right angle of this needle is placed a thread-carrier *b*, having a broad, flat spear-shaped point, in which are two or more holes, into which a thread passes from the spool *c*; this thread-carrier slides in guides below the table; the spool is also below that point. Opposite the thread-carriers will be seen a shuttle *d*, which runs in a race back and forth, as in the ordinary shuttle.

The inventor says: I *claim*, first, the combination of the needle *a*, thread-carrier *b*, and shuttle *d*, constructed, arranged, and operating in the manner and for the purposes described.

I also claim the method of operating the needle by means of the bent arm *i*, on the vibrating shaft *h*, actuating the slide to which the needle *a* is affixed.

No. 18,915.—WILLIAM H. LAZELLE, of New York, N. Y.—*Improvement in Sewing Machines*.—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the use of the revolving hook to form the loop, that being found in the patent of James E. A. Gibbs, June 2, 1857, to which this is an addition and improvement.

But I *claim* the addition to, or conjunction with, the revolving hook of the point or piece A attached to the feeder, which meets the point of the hook after it has caught the loop, and prevents the loop which is formed from interfering with the next loop, or from being lost; the whole made and operated as described.

No. 18,904.—GEORGE W. HUBBARD, of West Meriden, Connecticut.—*Improvement in Sewing Machines*.—Patent dated December 22, 1857.—This improvement consists in the use of a forked needle *c*, (which has one prong *d* longer than the other *e*,) which pushes the cotton through the cloth, instead of pulling it through, producing what is known as the chain-stitch seam. In this invention the feed takes place as the needle completes its ascent, though not until the latter has been withdrawn from the material *p*; and the loop, which up to that time has hung vertically below the material in the position in which the needle left it, is drawn by the feed movement over the edge of the opening *q*, and thus caused to be thrown up to a position nearly parallel with the face of the material, so that the needle in its next descent may pass through it, and carry through it the new loop.

Claim.—The forked needle, constructed and operating as described, to enchain the loops on the opposite side of the cloth or other material to that on which it enters.

No. 17,825.—ABM. BARTHOLOMEW, of New York, N. Y.—*Improvement in Feed-Motion for Sewing Machines*.—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—1st. Giving the necessary motion to the feeding wheel B, substantially as described, through the agency of a collar E, or its equivalent, which, by being turned in one direction around a central shaft B fitted loosely in said wheel, is caused to move longitudinally on the said shaft toward the wheel, and thus clamp the wheel in one direction parallel with the length of the shaft against the flanch *b*, or its equivalent, fast on the shaft, and thus to carry with it both the shaft and wheel in a circular direction, but which, on being turned in the reverse direction, is caused to move in the reverse direction parallel with the shaft, and thus to liberate the shaft from the feed wheel, and allow it to return without the said wheel.

2d. The attachment rigidly to the loose feed wheel shaft of a lever *b*, or its equivalent, so operated by a cam G, or its equivalent, that when the loose clamping collar E, or its equivalent, is allowed to return, after having given motion to the shaft and feed wheel together, the shaft is temporarily prevented from returning with the clamping collar, or equivalent; and thus the friction between the wheel and the fast flanch or projection against which the wheel has been clamped by

the clamping collar, is made to aid in preventing the return of the wheels with the loose clamping collar, or its equivalent, substantially as set forth.

No. 16,429.—WILLIAM B. BISHOP, of Brooklyn, New York.—*Improvement in Guides for Sewing Machines*.—Patent dated January 20, 1857.—The goods are placed with the double edge in the groove *i*; the needle then passes down through the small hole *h* in the shoe or pressure pad D, which is pressed down on the material by means of spiral spring *b* on shaft E; and as the cloth to be sewed will rest on the feed apparatus, the goods will regularly progress in a straight line with but little or no care from the operator.

The inventor says: I am aware of the patent of H. W. Dickinson, of May 15, 1855, wherein are used grooves in the under or bottom side of the pressure pad, for the purpose of stitching cords in work; and I therefore claim no part, device, or thing claimed by him.

I am also aware of the patent of John B. Nichols, January 30, 1835, for a binding attachment, which has a semi-elliptical groove, through which the binding passes, to double it around goods preparatory to sewing it thereon, and that said gauge is rendered adjustable; and I therefore claim nothing patented to him.

I claim an elongated pressure bar, or foot, having therein a flat groove to receive the edge of the centre or button-hole plait of shirt bosoms; and also a straight bearing surface, forming the under and guiding surface for the other seams or plaits of shirt bosoms, whereby I am enabled to stitch continuous straight seams in shirt bosoms at a rapid speed, and perfectly straight, without any care or help from the operator; the whole being constructed, arranged, and operating as set forth.

No. 16,586.—ADDISON HULL, of Brooklyn, New York.—*Improvement in Guides for Sewing Machines*.—Patent dated February 10, 1857.—The guide, in connexion with the foot-piece, which confines the cloth to the table, allows of its being easily adjusted at suitable distances from the needle, and makes it self-adjusting to various thicknesses of cloth while under operation.

The inventor says: I do not claim generally the attachment of the guide to the foot-piece, which presses on the cloth during the sewing operation.

I claim the attachment of the guide plate *c* to a spring bar E, or its equivalent, which operates independently of the foot-piece A, holding the cloth during the sewing operation, and is adjustable laterally to the same; and the connexion of the same by a vertically slotted connexion *d e*, with a slotted sliding plate C working through the foot-piece A, substantially as described, whereby the guide plate is made adjustable and changeable, as set forth.

No. 17,255.—CHARLES F. BOSWORTH, of Petersham, Mass.—*Improved Stitch for Sewing Machines*.—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Forming a stitch by passing a loop of thread taken from the opposite side through it, through any material to be sewn, and passing a loop of thread and fastening the last formed loop by passing the body of the thread upon the same side entirely through the said loop.

No. 17,835.—ABRAHAM HOAGLAND, of Jersey City, N. Y.—*Improvement in Tension Apparatus for Sewing Machines.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of two elastic wheels or rollers E E, governed by the saddle and thumb-screw I, between and around which the thread is passed to give it any required tension in sewing with a machine constructed and operated substantially as described.

No. 17,272.—BENJAMIN GARVEY, of New York, N. Y.—*Improvement in Needles for Sewing.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim any peculiar process of making such needles.

Neither do I claim an open-eyed needle, nor a needle with a spring attached to any part of it.

But I *claim* a sewing needle having a self-closed eye, with a slit leading outwardly, and made to terminate at a point more or less remote from the eye, through which slit the thread may be forced into the eye, in the manner and for the purposes substantially as described.

No. 18,807.—JOHN DEVLIN, of Philadelphia, Pa.—*Improvement in Sewing Thimble.*—Patent dated December 8, 1857.—A is a common sewing thimble. B the "guard," or "fender." The guard, or fender, consists of a piece of the same material of which the thimble is made, soldered fast, in a radial longitudinal position, on to the outer side of said thimble. It is made from about three-sixteenths to a quarter of an inch wide at the middle, and rounded smoothly off at each end, so as to prevent its catching against the thread or the material being sewed. It has also its outer edge turned upwardly, or so constructed as to form a boundary rim c around the upper side of the same, to catch the eye end of the needle, in case the latter should not be caught and held in the indentations d which are made in the upper side of the guard for the purpose, when the needle accidentally slips over the thimble proper.

Claim.—The application of a guard or fender to the outer side of a sewing thimble, substantially as and for the purpose set forth and described.

No. 17,334.—J. D. MINDER, of Killingly, Conn.—*Improvement in Machinery for Dressing Sewing Thread, Warps, or Yarns.*—Patent dated May 19, 1857.—The threads of yarn a coming from the sizing box, pass between the two series of brushes H and H', and are held steady by passing over and under stationary rods d. The brushes, by

the crank movement they receive from the wheels F and I, are made to approach and recede from each other, each pair meeting upon the threads which pass midway between them, brushing off the superfluous size, and laying the fibres even.

The inventor says: I do not claim the employment of revolving brushes for dressing sewing thread or yarn.

But I *claim* the employment for dressing sewing thread and yarns, of a series of straight brushes arranged in pairs, and having a crank motion towards and from each other, so that the several pairs engage and move together along the thread or yarn, substantially as described.

No. 16,734.—LUCIUS J. KNOWLES, of Warren, Mass.—*Improvements in Weavers' Shuttles*.—Patent dated March 3, 1857.—While the shuttle is in motion over the race beam and its thread is unbroken, the draught on such thread will maintain the tilting lever in a horizontal position, so as to keep the cam C forward, and cause it to operate the protector. But should the thread become broken, the lever will be relieved from the pressure of the thread, and will tilt so as to offer no obstacle to the movement of the cam C into the recess E, into which it will be pushed by the protector when driven against the same, and therefore the loom will stop.

The inventor says: I am aware that a stop-motion or mechanism has been applied to a shuttle and race beam of the lay of a loom, and so as to operate in such manner, in case of the breakage of the filling thread of the bobbin of the shuttle, as to stop the motion of the shuttle or arrest it in the race beam before it could enter the shuttle box next to that part of the said stop-motion which was affixed to the race beam. In this kind of stop-motion the shuttle, in being arrested in its motion across the race, is liable to be driven by the reed close into the crossing of the warps. In case such should take place, injury to the warps or loom may ensue. My stop-motion is of an entirely different kind, as it allows the shuttle to enter each shuttle box, and when once in either box the loom will be stopped in case the filling thread may have been broken during the passage of the shuttle across the race beam, and into such box.

I *claim* the combination of the tilting lever F, the inclined wires G G, or the equivalent of the latter, and a spring cam C, or means essentially the same as said spring cam, whereby, in case of breakage of the thread from the shuttle while the latter is in motion across the race beam of the lay, the cam or contrivance to operate the protector may be caused to so act with or against such protector, or its equivalent, that it shall be made to produce stoppage of loom, as stated.

No. 16,463.—JAMES S. BROWN, of Pawtucket, Mass.—*Improvement in Speeders*.—Patent dated January 27, 1857.—By loosening the set screws *m*, in disk D, the flanch J and cogged-wheel W are set free to turn on shaft S, and the step C and spindles T descend by their own weight, the racks *r* meshing in pinions P; the spindles T, in descending, leave their bobbins on the upper frame, for the purpose of taking off the rovings.

Claim.—The device for dropping the spindle, arranged and operated substantially as described, for the purpose of enabling the operator to remove the full bobbins and insert the empty ones in their place.

No. 18,529.—MILTON D. WHIPPLE, of Charlestown, Mass., assignor to ALFRED B. ELY, of Newton, Mass.—*Improvement in Machinery for Spinning Flax and Hemp, &c.*—Patent dated October 27, 1857.—The object of this invention is to obtain a machine that can spin hemp, flax, and similar fibrous material, directly from the hank, without the necessity of first forming it into a sliver; thus doing away with the drawing rolls and much of the expensive part of the operation of spinning, and substituting therefor a drawing movement that more closely resembles that of hand spinning, and which allows the twist given by the spindle to follow up close to the hank from which the fibres are drawn.

The engravings and claim will further show the nature of this invention.

Claim.—First. The device employed for regulating the amount of fibre drawn from the hank by the size of the yarn, consisting essentially of the lever a^2 and scrow or stop b^2 , attached to the draw nipper 8, with its immediate connexions, and the hook disk z^1 , operating in the manner substantially as set forth.

Second. The vibrating draught nippers, operating in the manner substantially as set forth, whereby the twist is allowed to run up.

Third. The vibrating hank-holder U, constructed and operating substantially as described.

Fourth. The inclined wires or teeth on the guide pulleys O^1 R^1 , operating in the manner and for the purpose substantially as set forth.

No. 16,657.—JOHN N. SAWTELL, of Lowell, Mass.—*Improvement in Manufacturing Spinning Flyers.*—Patent dated February 17, 1857.—The inventor says: I do not claim the process of casting cast iron around wrought iron, whether the wrought iron be or be not heated when the molten cast iron is poured thereon, as such process is well known.

Neither do I claim the constructing of the flyer of two different metals, without regard to how these two metals are united to each other, as different metals are now used in the formation of many articles.

I *claim* the manufacture of flyers, substantially in the manner described—that is to say, casting on the polished arms E E, the neck or nozzle F of metal, when the former are prepared by the application of a proper composition, so as to render the adherence of the nozzle to the arms secure, as set forth.

No. 18,029.—GEORGE WRIGHT, of Grafton, Mass.—*Improvement in Self-Acting Mules for Spinning.*—Patent dated August 18, 1857.—A detailed description of this invention would take up too much space to be given here.

Claim.—Giving a second draught to the yarn after the delivery of the

ends has ceased, for the purpose and in the manner substantially as set forth.

Second. Operating certain motions upon the carriage, such as braking up the spindles, backing off the yarns, and operating the upper faller by the taking in scroll chain, as set forth.

Third. Running the drum band over a vibrating arm upon the carriage, and clamping it thereto at intervals for the purpose of backing off and winding up the yarn, as set forth.

Fourth. Hanging the stop which holds the carriage stationary while the second twist is put into a spring, so that it may yield in the manner described to prevent injury or breakage of the yarn, as set forth.

Fifth. Varying the obtuseness of the cone upon different portions of the cop by means of the block F, operating in the manner substantially as set forth.

No. 18,081.—CHARLES K. BRADFORD, of Lynn, Mass.—*Improved Machine for Spooling Thread*.—Patent dated September 1, 1857.—By revolving the bobbin A, the thread x is caused to wind on it, the thread-carrier g resting against the side of the helix coil of the thread; such helix coil, by its pressure against the carrier, will force or slide it along laterally, so as to cause the thread to be drawn through the carrier and be evenly laid over the bobbin.

The inventor says: I do not claim combining with mechanism for rotating a spool or bobbin a mechanism for regulating the winding or laying of the thread on such spool or bobbin.

But I *claim* the improved mode of regulating the winding of the thread—that is, by causing the thread-carrier to rest directly against, and be moved and guided in its movements by, the side of the helix coil on the bobbin, as stated.

No. 18,391.—S. E. DAVIS, of Waterbury, Conn.—*Improvement in Twine Reels*.—Patent dated October 13, 1857.—A represents a box, having three standards $a a b$ at each side; B C are two reels or spools, the journals of which are fitted in the upper ends of standards $a a$; and the two spools are connected at one end by a belt or cord D, which passes around pulleys E E attached or formed on the ends of the spools. The spool B is shown filled with twine; but the spool C is empty, and has an end of a ball of twine F attached to it—said ball being within the box A, and the twine passing through guides a^* .

Claim.—The combination of the two spools B C, connected by the cord or belt D and the box or receptacle A, arranged substantially as and for the purposes set forth.

No. 17,177.—THOMAS THOMPSON, of Niversville, N. Y.—*Improvement in Machinery for Winding Wadding*.—Patent dated April 28, 1857.—A detailed description of this invention would take up too much space to be given here. The engraving represents the general arrangement of the machine.

Claim.—The apparatus, substantially such as described, for removing the full roller and supplying or depositing the empty roller, or

the equivalent thereof, for the purposes substantially set forth. Also, the devices covered by the first claim, or their equivalents, in combination with the rollers arranged to divide or break the wadding or other material wrought, substantially as described.

No. 18,620.—SAMUEL CAMPBELL, of Whitestown, N. Y., assignor to JOHN C. WHITIN, of Northbridge, Mass.—*Improvement in Machinery for Dressing Warps*.—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—The method of dressing warps by means of brushes above and below each section of yarn, said brushes being alternate in their movement, and constructed to come in contact with and leave the yarn gradually by the mechanism described, or any other substantially the same.

No. 16,622.—WILLIAM H. WATROUS, of Brooklyn, N. Y.—*Improvement in Wool-cleaning Machines*.—Patent dated February 10, 1857.—D is a cam rim secured to one end of the picker cylinder, and serves to vibrate the wire-cloth apron E by means of guide-pin F, for the purpose of working the dust therefrom. The object of the fan-blower M discharging its blast at right angles to the line of motion of the picker cylinder, is to blow off the dirt and motes from the wool. The motes will work through the meshes of E, and by the blast of air will be carried against the screen R, to be collected while the air and dust escape.

The inventor says: I do not claim the picker cylinder, the fan-blower, or the reciprocating screen, and the devices for operating the same individually, as these have all been applied for analogous purposes. But I *claim* the combination of the picker cylinder B, reciprocating screen E, exhaust screen R, and fan-blower M, arranged and operating in the manner and for the purposes specified.

No. 16,864.—MICHAEL H. SIMPSON, of Boston, Mass.—*Improvement in Machinery for Combing Wool*.—Patent dated March 17, 1857; antedated September 17, 1856.—In operating with this machine, the wool or fibrous material, as in the original machine of Coucilland, is spread upon an endless apron B; and, by means of the feed rollers and a "licker in," it is taken from said apron and transferred to the main cylinder A; and, during the revolutions of the same, the fibrous material is subjected to the action of the workers and strippers, situated above said card cylinders. Next, by means of the extra doffer L and stripper M, it is removed from the main card cylinder and laid upon the combing doffer I, by which it is thrown upon and amongst the teeth of the revolving comb N; from the latter the longer fibres are drawn by the rollers U V, and from thence, in the form of a sliver, they pass through the condensing belt f, thence between the rollers h i, and into the neck of the flyer, and are finally wound upon the bobbin.

The inventor says: I *claim* the combination and arrangement of an extra doffer L and stripper M, or equivalents therefor, with the main card cylinder, the combing doffer I, and the combing belt N;

the whole being substantially in the manner and for the purpose as specified. I also claim the described improved arrangement and construction of the draught rollers U V, with respect to each other and the combing belt N. I also claim making the wires of the fringe belt W to extend below the table Z, and to run through a passage C formed between the part Z and the combing belt, or in the table, as specified. I also claim combining with the curved plate R, when such is employed in connexion with the doffer I and the combing belt N, a steam-heating chamber S, or other suitable means of heating such plate, as set forth.

No. 17,244.—CULLEN WHIPPLE, of Providence, R. I.—*Improvement in Machines for Combing Wool*.—Patent dated May 5, 1857.—The fibres to be operated upon pass into the machine over an apron α to the teeth on cylinder b , and the fibres are pressed between the teeth of said cylinder by brush y , which revolves around shaft y^1 . The forward ends of the fibres are then raised by brush k , and seized by nippers u , and carried forward after the first ends are cleaned by drawing them through the teeth of the cylinder b ; and when combed, the nippers u open and leave the cleaned fibre to return for the next quantity. And by this operation repeated, the continuous sliver is made, each quantity taken being made to overlap the preceding; and the fibres themselves are not removed from between the teeth on the cylinder from the time they are fed in until they are perfectly combed.

The inventor says: I do not limit myself to the construction and special arrangement of the parts, so long as the peculiar mode of operation described is attained, and the fibres are retained between the teeth of the surface b while being combed.

Nor do I claim the mechanical parts separately, or confine myself to the details described.

I claim the combining machinery as described, whereby the fibres, after being fed into or received amongst teeth, (set in a suitable surface,) have their ends raised out from the teeth and held by nippers while the ends are cleaned, the cleaned ends of the fibres being then nipped and drawn among the teeth in order to clean the other ends, and also to separate this quantity of fibres from the other fibres amongst the teeth; the protruding ends are then deposited amidst the teeth in such manner that they overlap the ends of the quantity of fibres which have been just previously similarly treated, thus admitting of the prepared or combed fibres being doffed or drawn off from the teeth in a continuous sliver, as explained.

No. 18,564.—JOHN WATERHOUSE, of Little Falls, N. Y.—*Improvement in Machines for Burring Wool on the Felt*.—Patent dated November 3, 1857.—The nature of this invention relates to a machine for burring and cleaning wool on the pelts, by clamping said pelts between feeding rollers and presenting them, thus held by the feed rollers, to the action of a revolving cylinder, armed with teeth and beaters, so arranged as to comb or straighten out the fibre whilst the beaters knock off the burrs and other extraneous matter; the pelt being held

so as to prevent all danger of being drawn into, torn, or injured by the cylinder.

The inventor says: I *claim*, first, the combination of the feeding apparatus, which holds and controls the pelt, with a cleaning cylinder arranged, constructed, and operating substantially as set forth.

Second. I claim the combination of the rollers D E, one being elastic and the other non-elastic, for holding and presenting the pelt in a curved or bent form to the action of the cleaning cylinder, as described.

Third. I claim, in combination with the holding and presenting rollers, the feeding rollers F F—one of said rollers F being elastic, and the other non-elastic—as described and for the purpose set forth.

Fourth. I claim mounting one of the feed rolls F and one of the holding and presenting rolls on the main frame, and their fellows upon a travelling carriage, for the purpose of facilitating the introduction, turning, and removal of the pelt, as set forth.

No. 16,934.—LUCIEN E. PRATT, of South Kingston, R. I.—*Improvement in Preparing Yarn for Dyeing and Scouring*.—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the use of this or any other particular machine, for the purpose of forming the described muff or body of the yarn, as the same might be done on a reel, by having a suitable guide so constructed and arranged as to move a suitable distance along the reel alternately, or other different devices might be used for producing the same effect.

I do not claim winding a single thread in helices crossing one another, as is done in the formation of cops or balls of sewing thread.

But I *claim*, in making muffs of thread or yarn to be dyed or otherwise treated as described, my improvement consisting in winding a series of threads, each separated from or at a distance from the other, in one helix band around a cylinder or drum, and so that the coils of each layer of such on the cylinder may cross those of the next layer, substantially as described.

No. 17,379.—CHRISTIAN KNAUER, of Pittsburg, Pa.—*Improvement in Reels for Yarn or Thread*.—Patent dated May 26, 1857.—The machine being secured to a table by means of clamps *o* and set screw *p*, the operator places the yarn over the wings *n* of the arms *c* in a loose condition; then, by holding the back plate B with his left hand and turning plate A with his right hand, causes the guides *d*¹ to turn the arms *c* on their pivots *m*, and thus to expand them so as to tighten the yarn, the arms *c* being held in position by pivot *b* acting on ratchet *a*¹.

Claim.—The combination of the plates A and B, provided with the ratchet *a*¹ and pawl *b*, the curved arms *c*, and swivel guides *d*¹, arranged and operating substantially as described, for the purpose specified.

No. 18,461.—SAMUEL CUNLIFFE LISTER, of Bradford, and JAMES WARBURTON, of Addingham, England.—*Improvement in the Manufacture of Cotton Yarns*.—Patent dated October 20, 1857.—The engraving and claim explain the nature of this invention.

The inventors say: We *claim* an improvement in the process of manufacturing cotton yarn, the same consisting in wetting the cotton roving previous to its being drawn, and in drawing and spinning it while it is in a wet state, such being productive of advantages as stated.

And we also claim, in the process of impregnating the roving with water or liquid, and drawing and spinning it while wet, the employment of heated water or heating the water as explained, whereby advantages are gained as set forth.

No. 16,903.—GEORGE S. BRADFORD, of Sandlake, N. Y.—*Improvement in Manufacturing Yarns from Mixed Cotton and Wool*.—Patent dated March 31, 1857.—The evenly prepared cotton drawing I is steadily drawn by rollers E F from a cam J through a guide K and a condenser C, so in front of the doffer A, that as the wool is combed from the doffer in the manner of making a side drawing, the cotton drawing I is evenly covered with successive layers of wool, the fibres of the cotton core remaining nearly or quite as straight as they were before being covered.

The inventor says: I do not claim the mechanism employed for covering a cotton drawing with wool.

But I *claim* carding, through the finisher as specified, the drawing made by covering an evenly prepared cotton drawing with wool, as described, thereby leaving most of the wool on the outside of the finished roving, without carding the cotton through any wool carding machine but the finisher, and hence leaving the staple of the cotton straight in the finished rovings, as set forth.

IV.—CHEMICAL PROCESSES.

No. 16,879.—PHILIP O'REILLY, of Providence, R. I.—*Improved Apparatus for Making Nitric Acid*.—Patent dated March 24, 1857.—B is the retort. D is a stopper, which is removed to change the retort. A is the agitator, having attached to it a series of radiating arms *a a*. C is a pipe which conveys the vapor from the first receiver T to the condenser F. O is a pipe which connects the two condensers. P R is the purifier, consisting of a granite block P, hollowed out and having a brick dome R erected upon it. H is a pipe leading from the condenser F to the purifier. M is a pipe to convey steam or hot air from a boiler or hot blast apparatus below the surface of the acid in the purifier to blow up through the acid, to expel the nitrous fumes and chlorine. W is a pipe to convey the nitrous fumes and chlorine to a receiver and condenser V.

The inventor says: I *claim* purifying nitric acid in the manufacture from chlorine and nitrous fumes, substantially in the manner set forth.

No. 17,830.—**LAWRENT GAMOTIS & SABIN MARTIN**, of New Orleans, La.—*Improved Apparatus for Making Acid Sulphate of Lime*.—Patent dated July 21, 1857.—The cistern *h* being filled with water to such a height that the surface of the water reaches a few inches above the lower edge of partitions *i*, a certain quantity of milk of lime is poured through funnels *g*, and the retort, within the furnace *J*, is filled with sulphur; and as soon as said sulphur is ignited, the pump *m* is set in motion, causing the sulphurous acid to pass through the milk of lime, forming sulphite of lime.

Claim.—The process of making bi-sulphite of lime by means of furnace *J* and cisterns *h*, *h*, *h*, *k*, operated as set forth.

No. 17,976.—**ALFRED MONNIER**, of Camden, N. J.—*Improvement in the Manufacture of Sulphuric Acid*.—Patent dated August 11, 1857.—Sulphuret of iron is pulverized and mixed thoroughly with from 33 to 75 per cent. of its weight of caustic soda; to this mixture is added so much water as to make the mass coherent and to mould it into blocks. These blocks are burned in the same manner in which pure sulphur is ordinarily burned, the sulphur of the pyrites being converted into sulphurous acid, which, upon being combined with oxygen, is converted into sulphuric acid.

Claim.—The process of preparing native metallic sulphurets, by pulverizing them and mixing them with the substances as described, in order to extract all or nearly all the sulphur from them, for the purpose of making sulphuric acid.

No. 18,214.—**GEORGE THOMPSON**, of East Tarentum, Pa.—*Improvement in Boxes for Preserving Alkalies*.—Patent dated September 15, 1857.—The caustic alkalies are put in a red-hot state into small sheet iron cylindrical boxes, the bottoms and tops of which are secured to the body by means of lap joints, which are made tight by the application of an infusible cement, made by moistening fire clay with linseed oil.

Claim.—The use of metallic boxes, constructed as described, and united with infusible cement, for the purpose of putting up the caustic alkalies of soda and potassa in small quantities, as described.

No. 16,771.—**ELIE MOURIER** and **JULES FRANCOIS EDWARD VALLENT**, of Paris, France, assignors to **HENRY MIGEON**, of New York, N. Y.—*Improvement in Fluxes for Treating Alloys*.—Patent dated March 3, 1857.—The object of this improvement is to produce a dense, sonorous, homogeneous, and brilliantly-colored metal. The composition is as follows: 100 parts, by weight, of copper; 17 of zinc; 6 of magnesia; 3.60 of sal ammoniac; 1.80 of quicklime; 9 of unpurified tartar.

The inventors say: We do not claim making an alloy of copper and zinc or tin, as this is well known; and we do not limit ourselves to the precise proportions specified of non-metallic chemical substances used with said metals during the process of refining, as said non-metallic

substances may be slightly varied, according to the quality of metal operated on, so long as substantially the same effect is produced on the metal by the ingredients specified, or others having equivalent properties.

We *claim* the employment, in combination, of the non-metallic substances, substantially as specified, or substances having equivalent properties in the refining of copper and its alloys, whereby the essential qualities specified are imparted to the copper or its alloy.

No. 18,201.—ADOLPH HAMMER, of Reading, Pa.—*Improvement in Coolers for Breweries*.—Patent dated September 15, 1857.—The hot wort is admitted to this cooler at the head *g*, and passes through the channels between the partitions B, as indicated by the arrows, and escapes, when cooled, through hole *h*.

Claim.—The application thereto of the moveable partitions B B, rendered stationary in the manner substantially as described, and for the purpose set forth.

No. 17,968.—ADOLPH HAMMER, of Reading, Pa.—*Improvement in Brewers' Steam Boiling Apparatus*.—Patent dated August 11, 1857.—The pipes, as represented in the engraving, are used in place of the coiled tubes for heating the water in boilers; steam enters pipe B¹, passes through the pipes in the direction of the arrows, and escapes at *l*. The pipes B can be turned from their horizontal position to a vertical position, for the purpose of cleansing them, by turning them on pipe B¹ as fulcrum, which rests in suitable bearings M of the tub.

The inventor says: Disclaiming connecting a series of branch pipes with and on to a main pipe, upon which said branch pipes may be rotated in the manner described by A. Stillman in his patent of May 16, 1846,

I *claim* arranging the steam pipe in boiling apparatus in two or more separate and distinct parts or series, in the manner substantially as described, whereby either both or all parts or series of pipes may be elevated by rotating the same upon axes of rotation at or near the centre of the tub, for the purpose specified.

No. 18,220.—ADAM WOOD, of Pittsburg, Pa.—*Improvement in Brewers' Coolers*.—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim in the abstract, or separately considered, the corrugated sheet metal bottoms, viewed only as a means to compensate for the expansion and contraction of the metal; for this is a well known mode of obviating this difficulty, and is employed in metal plates for roofing and other purposes.

Neither do I claim the cooling of the liquor by means of cold water tubes with which the liquor is brought in contact, irrespective of the arrangement shown; for such means have been previously employed.

But I *claim* constructing the coolers in two parts A B, corrugated and placed in contact as shown, so that cold water or air passages *e f* are found between said bottoms, and the bottoms allowed to expand

and contract freely without injury, by which the bottom of the liquor within the cooler may be cooled as quickly as the top, or the heat rapidly absorbed from both surfaces, and the cooling of the whole mass or quantity therefore greatly expedited.

No. 18,338.—HENRY HOFFMAN, of New York, N. Y.—*Improvement in Bronzing Liquids*.—Patent dated October 6, 1857.—The nature of this invention consists of a fluid bronze composition formed by combining metallic powder, known by the names of "gilding" and "bronze powder," with "collodion," which composition is capable of being applied as a bronze liquid to surfaces of wood, iron, or any solid material, for the purpose of coating the same for decoration and preservation.

The inventor says: I do not claim to be the first inventor of bronzing liquids, for I am aware that a compound for this purpose was patented in England January 13, 1844, by H. Bessemer; that compound, however, is expensive in its nature and difficult in its manufacture, having no ingredients analogous to mine, save the powdered metal; Bessemer's compound required the employment of a size in order to secure its proper application, but mine requires nothing of the kind; Bessemer's fluid also requires a long time for drying, but my fluid becomes dry within a few minutes after its application.

I claim the fluid or liquid bronze composition described for the purposes set forth.

No. 17,713.—LEONARD WRAY, of London, England.—*Improvement in Defecating Cane Juice*.—Patent dated June 30, 1857.—This process consists, first, in the cold defecation of the raw juice by means of lime, cream of lime, or other suitable combination of lime, immediately followed by filtration; and secondly, in the treatment of the clear juice resulting from this cold defecation, with infusion of nut galls, aided by heat in suitable vessels and subsequent filtration.

The inventor says: These comprise the whole of my treatment, and I submit that they constitute an entirely distinct and new process, being one whereby excellent crystallized sugar has been, and can always be, made from the plants I have before named; and I therefore claim the process set forth.

No. 18,381.—MORGAN W. BROWN, of Buffalo, N. Y.—*Improvement in Preparing Fats for Candle-Making*.—Patent dated October 13, 1857.—The nature of this invention consists, 1st. In converting animal and vegetable, fatty and oleaginous bodies into a *soluble soap*, preparatory to and for the purpose of converting the same into candles.

2d. In the employment and use of the sulphate of soda in admixture with soluble soap, and before its decomposition or change into fatty acids, for the purpose of economy, and as an auxiliary to the action of sulphuric acid in the succeeding degree in the process.

3d. In a decomposition or change of the soluble soap into the liberated fatty acids, by the employment and use of dilute sulphuric acid in admixture therewith.

4th. In the use of spirits of turpentine, camphene, or burning fluid,

in admixture with the fatty acids while in a fluid state, before and preparatory to the expression of the acid oil therefrom by pressure.

5th. In the employment and use of alcohol in admixture with the stearic acid (in a liquid state), and after the stearic acid has been separated from the oleic acid as aforesaid, by pressure, for the purpose of purifying the same before it is moulded into candles.

The inventor says: I am aware that soluble soap for washing and cleansing purposes is well known, and has long been used; therefore I do not claim its manufacture, application, and use for any such purpose.

I am also aware that insoluble lime soap has heretofore been used in the manufacture of candles; therefore I do not claim its manufacture, application, or use for such purpose.

But I *claim*, first, the employment of a soluble soap as a base upon which to work my process for converting the same into stearic acid candles, substantially as set forth.

Second. I claim the application and use of the sulphate of soda and its equivalent corresponding salts in admixture with soluble soap, before a decomposition or change of the soluble soap into fatty acids, for the purpose and substantially as set forth.

Third. I claim the application and use of dilute sulphuric acid, or its equivalent, in admixture with soluble or detergent soap, for the purpose of decomposing or changing the soluble soap into fatty acids, substantially as set forth.

Fourth. I claim the use of spirits of turpentine, camphene, or burning fluid, in admixture with the fatty acids while in the liquid state, before and preparatory to the expression of the oleic acid oil therefrom by pressure, substantially as described.

No. 16,754.—BENJAMIN D. SANDERS, of Holliday's Cove, Va. *Improved Mould Candle Machine*.—Patent dated March 3, 1857.—Figure 2 represents the mode of centring the wick by sliding forward the notched plate C.

Claim.—Causing the wick centring slide C to stretch and hold the wick in the mould by its operation on the wick when bent over the slide, and said bent portion of the wick having the drawn candle attached or suspended to it in rear of the notched edge of the slide, essentially as set forth.

No. 18,281.—CHARLES H. HINCKLEY, of Stonington, Conn.—*Improvement in Coating Hose-Pipe*.—Patent dated September 29, 1857.—The principle of this invention consists in a peculiar mode of applying a coating of vulcanized India rubber to the inside of a hose-pipe formed of fibrous materials. The pipe is prepared by having it woven in shape from strong hemp cord, or twine, or other suitable material; to the outer surface of the pipe a thin coating of vulcanized India rubber is applied by any of the known methods. The pipe is then turned so as to bring the coating within, by using a copper or brass pipe A *x x x* of a size such as will just pass within the canvas pipe, and of a length equal to the greatest length of the pipe to be turned.

The drawing is a vertical section, showing the position of the hose-pipe during its transformation while passing on and through the metal pipe.

The inventor says: I *claim* the process of constructing pipe of textile and fibrous material, with an internal coating of vulcanized India rubber, viz: First applying the India rubber coating on the outside, and afterwards inverting the same by drawing it over and through a metallic cylinder.

No. 17,708.—JAMES THOMSON and WILLIAM P. WAKELIE, of New Hartford, N. Y.—*Improvement in Coloring Yarn in the Bobbin*.—Patent dated June 30, 1857.—The bobbins *i k l* are inserted within suitable holes in the plates *f h*. The air is then exhausted from the vessel in which the bobbins have been placed, by means of air-pump *S T*; and by then opening the faucets *a* the liquid dye rushes into the chambers *o*, and up through the hollow skewers *a b*, (fig. 2,) and, following the vacuum, it penetrates the yarn from inward, filling the boxes *r* and *g*, passing into boxes *m*, and escaping through pipes *u V* into the receivers *W X*, from which the air has previously been exhausted.

The inventors say: We are aware that a vacuum has been used to facilitate the admission of the dyeing material into the pores and around the fibres in the dyeing of cloth. We do not, therefore, claim the use of a vacuum for the purpose of dyeing generally.

We *claim* the use of a vacuum, in combination with our arrangement of apparatus to render the same available in the dyeing of yarn in the cop, bobbin, and the like, without first reeling it into hanks or skeins. as described; the whole apparatus being constructed and operating substantially in the manner and for the purposes set forth.

No. 16,918.—JOSEPH W. HARMON, of Brooklyn, N. Y.—*Improved Composition for Floor-Cloths*.—Patent dated March 31, 1857.—The ingredients of this compound consist of eight pounds of residuum from stills of candle factories, eight pounds of spirits of turpentine, eight pounds of rosin oil, sixteen pounds of yellow ochre, sixteen pounds of Venitian red, sixteen pounds of whiting, three pounds of oil cake, one and a half pound of umber, three pounds of fresh slacked lime, three-fourths of a pound of litharge, which are mixed and ground together, when they are ready for use.

Claim.—The use of this compound, or the application of the same to the making and manufacturing of floor-cloth carpets, substantially as set forth.

No. 18,270.—JOHN J. BATE, of Brooklyn, N. Y., and FRANCIS S. Low, of Jersey City, N. J.—*Improvement in Compositions for Covering Meats*.—Patent dated September 29, 1857.—The materials of which this composition is made, and the manner in which it is applied, are thus described by the inventors: Thirty pounds of the common rosin of commerce and two and a half pounds of beeswax are placed in a kettle over a slow fire and melted. Two and a half quarts of shellac varnish—formed by dissolving about two pounds of gum shellac in a gallon of alcohol, without heat—is then poured into the melted mixture; after this, six pounds of pulverized soapstone is added to,

and thoroughly mixed with, the other ingredients, by stirring them about. When thoroughly mixed, as directed, the composition is ready to be applied either by inserting the meat or other article—previously covered with cloth, paper, or other flexible material—into it, and withdrawing the same with as much of the composition adhering to the covering as it will retain, or by putting it on the article with a common paint brush, as may be desired, in view of the quantity or size of the articles to be coated.

Claim.—The inventors do not claim broadly, as their invention, the covering of meats and other articles with paper, cloth, or other flexible material; nor do they claim protecting such articles, after being covered, by coating their covering with a composition to protect and preserve them from injury by water, dampness, or vapor; but what they do *claim* as their invention, and desire to secure by letters patent, is, the use of shellac varnish and beeswax, in combination with the materials described, and in about the proportions named, for the purpose of forming the composition as described.

No. 16,709.—SAMUEL BOORN, of Lowell, Mass.—*Improvement in Compositions for Shuttle Drivers.*—Patent dated March 3, 1857.—This driver is composed of pieces of leather *a, b, c, d, e.* These pieces, before their attachment, are introduced into a composition of two pounds of gum shellac, one pound of rosin, one-quarter of a pound of isinglass, and two ounces of gum arabic. These ingredients are dissolved in alcohol and spirits of turpentine. This will give the leather a certain strength and polish, and prevent the wearing of the striker by the nose of the shuttle.

Claim.—The described composition to be used in the manufacture of the striker of a shuttle driver, as described.

No. 18,199.—EDWIN GOMEZ and WILLIAM MILLS, of New York, N. Y.—*Improvement in Safety-Fuse Compositions.*—Patent dated September 15, 1857.—Equal parts of chlorate of potash, in fine powder, and of ferroxyanide of lead, are mixed with alcohol to the consistency of a paint, and applied with a fine brush to a strip of paper; this is then encased within a winding of fibrous material that will keep the powder in place when dry, and which may be varnished to resist moisture.

Claim.—The explosive compound for safety trains, fuses, and similar purposes, formed of the ingredients, and substantially as specified.

No. 17,381.—JOHN LEIGH, of Manchester, England.—*Improvement in Sizing Compositions for Yarns, Paper, &c.*—Patent dated May 26, 1857.—This invention consists in the application of silicate of soda, or silicate of potash, to the sizing, dressing, or stiffening, or otherwise preparing yarns and woven fabrics; said silicates may be prepared by fusing together, in a suitable furnace, fine pure white silicious sand with caustic soda, carbonate of soda, or carbonate of potash, which is then dissolved by steam or hot water, and reduced to the proper consistency, when it is ready for use.

Claim.—As my invention, or discovery, the sizing and dressing of

yarns, woven goods, and paper, by means of the alkaline silicates, as set forth.

No. 17,867.—IRA CARLE, of Kingston Township, Pa.—*Improvement in Tanning Compositions*.—Patent dated July 28, 1857.—The liquor extracted from two cords and a half of hemlock or oak bark is put into a vat containing fifty sides of hides; to this is then added three pounds of nitric acid and twenty pounds of Glauber salts, so as to impregnate the whole contents of the vat.

Claim.—The use of hemlock or oak bark, nitric acid, and Glauber salts, all to be used in one bath, for the purpose of tanning leather from hides in a short space of time, as set forth.

No. 17,562.—A. K. EATON, of New York, N. Y.—*Improved Depilating Compound for Hides*.—Patent dated June 16, 1857.—For depilating a pack of fifty sides of cow hides, or one hundred and thirty calf skins, the following ingredients are to be used. Fifteen pounds of soda ash and thirty pounds of caustic lime are stirred in ten gallons of soft water; to this is then added one pound of sulphuret of potassium, dissolved in water. Of this mixture such a quantity is poured into the vat as will give the liquor the required strength to operate upon the hides.

Claim.—The depilating process described, consisting in the employment of the ingredients mentioned, in the manner set forth.

No. 17,392.—LOUIS S. ROBBINS, of Brooklyn, N. Y.—*Improvement in Fertilizing Compounds*.—Patent dated May 26, 1857.—Two parts of greensand, which contains very little or no carbonate of lime, are mixed and ground with one part of phosphate of lime; and when thoroughly incorporated and pulverized, the mixture is ready for use as a fertilizer.

The inventor says: I do not claim the separate use of superphosphate of lime or of greensand, but the new composition of matter obtained by the intimate mixture of greensand and superphosphate of lime in a finely pulverized form, for the purpose specified.

No. 17,709.—CARTER VAN VLECK, of Macomb, Ill.—*Improvement in Resinous Compounds for Covering Hams*.—Patent dated June 30, 1857.—This composition consists of 40 parts of rosin, 5 parts of gutta-percha, and 4 parts of tallow, or other oleaginous matter.

Claim.—The described composition for covering hams and other provisions, or other bodies, for the purpose of preserving them from decay or decomposition, consisting of rosin, gutta-percha, and tallow, in the proportions substantially as specified.

No. 17,586.—JOHN C. FR. SALOMON, of Baltimore, Md.—*Improvement in Condensing Apparatus for Salt and Gases*.—Patent dated June 16, 1857.—The operation of this apparatus, when connected with a steam-engine, is as follows: The fan *d* being put in motion, the exhaust from the engine is injected into the receiver *k'* at the opening *a*, where it comes in contact with the refrigerating surfaces of the cor-

rugated globe C and blast pipes c; here it is partially condensed, and the liquid formed passes down through the tubes i into the receiver k⁴, and the vaporous portion rises through tubes i¹ into receiver k², where it is further condensed, and the liquid passes down to the tubes i², to the receiver k⁵; above this receiver k², the blast is allowed to escape into the air, and the uncondensed gas is forced through pipe e, down to the bottom of the receiver k³, where its course is impeded by cup l, and is directed upwards, the condensed portion passing through diaphragm f and tubes b and i³, into receiver k⁵, the gaseous portion passing from receiver k³, through tubes e¹, into receiver k⁶, the water pipes c¹ completing the work of condensation, and the liquid there formed passes through tubes i⁴ and b into receiver k⁵, where the entire product of condensation is collected.

Claim.—The combination of a series of blast pipes c and free air or water passages c¹ with a succession of receivers k, arranged and operating substantially in the manner and for the purposes set forth.

No. 17,711.—JOHN WALTON, of Louisville, Ky.—*Improvement for Condensing Liquids in Gas Main Pipes.*—Patent dated June 30, 1857.—

The gas passes from the main pipe B into the vessel A, which is filled with alcohol; and as the gas passes over the alcohol, the latter absorbs the aqueous vapor with which the gas is charged, and the gas then passes off through the service pipe C.

Claim.—The employment, substantially as described, at any convenient place or places in the gas pipes of one or more vessels or receptacles containing alcohol or other hygrometric agent, for the purpose specified.

No. 13,286.—WILLIAM JOHNSTON, of Brooklyn, (E. D.) N. Y.—*Improvement in Cork Sole Stuff.*—Patent dated September 29, 1857.—

This improvement is described by the inventor as follows: I construct the cork cloth of cotton muslin, silk, leather, or other suitable material, which material is stretched on a solid frame; on the surface of the material is laid a priming of boiled oil, over which I sift a quantity of fine pulverized cork, and press it in with rollers before the oil is dry, and allow it to remain some time to dry. I then apply another coat of oil and sift another quantity of fine cork over it, which is pressed in as before, repeating this process until I obtain the substance required. The pulverized cork is made by grinding solid cork in a burr stone mill, or any other that will reduce it fine.

The claim is thus stated: I claim the making of cork cloth by the aforesaid process for inside soles and lining of boots, shoes, and other articles for which solid sheet cork has hitherto been applied, using for that purpose the aforesaid materials, or others substantially the same, to produce the same results.

No. 18,980.—JAMES M. LEGARE, of Aiken, S. C.—*Improvement in Preparing Plastic Cotton for Moulding Purposes.*—Patent dated December 29, 1857.—The nature of this invention consists in rendering cotton, lignine, or any fibrous material whatever soft and plastic, capable of being worked up by hand without the use of moulds, and so

converted into furniture of solid or open patterns and decorations of buildings, and into fire and water proof roofing.

In manufacturing this article, steep, in a hot solution of caustic alkali, the cotton or other fibrous product, until the lignine is in part freed from gummy and other matters; then wash in three or four waters, and dry, avoiding the use of acids.

The solutions required may be kept separately or united in proper proportions, as given below, and are thus composed:

$\frac{1}{2}$ lb. alum, dissolved in one gallon of water; 1 lb. sulph. of protox. of iron, dissolved in one gallon of water; $\frac{1}{4}$ lb. of glue, dissolved in one gallon of heated water; 1 lb. glue and one pint of gypsum, dissolved in a gallon of water.

Claim.—The process of rendering cotton and other fibrous materials, including lignines of all kinds, plastic, and capable of being worked by hand or applied to roofing and other kindred uses, in the manner and for the purposes set forth in the specification.

No. 17,974.—NICOLAS MARY, aîné, of Philadelphia, Pa.—*Improvement in Silk Dyeing Machines.*—Patent dated August 11, 1857.—The fabric to be dyed passes from roller A into the steam box B, where it becomes slightly dampened by the steam; it then passes over the surface of the three felt covered rollers D E F, which are revolving in the dye, and transfer said dye to the fabric. From roller F, the fabric passes into box L, where it is subjected to the action of steam, which diffuses the color uniformly through the material, which is finally wound upon roller N.

Claim.—The combination of the steam chambers B and L with the friction surface of rollers D E and F, for preparing and dyeing the material; the whole being arranged and operating substantially as described.

No. 17,635.—EDWARD PIERCE, of Philadelphia, Pa.—*Improvement in Enamelling Iron Pipes and Hollowware.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The enamelling of the interior surfaces of pipes or cast iron ware, by placing a vitrifiable compound on the core before the core is inserted into the mould, in the manner and substantially as described.

No. 17,548.—CHARLES W. ATKESON, of Henderson, Ky.—*Improvement in Basin Evaporators.*—Patent dated June 16, 1857.—The salt water is admitted into the boiler C through a pipe at the bottom or top of said boiler, and is heated by the fire of furnace A, the heated gases rising up the flue B and circulating through flues a. The enlargement D, at the top of the boiler, facilitates the evaporating process by furnishing an enlarged surface, from which the steam may freely rise and pass off into the heating tubes of the granulating vats.

The inventor says: I am aware that a series of horizontal tubes has been combined with the flue of a vertical cylindrical steam boiler, and therefore I do not claim said arrangement.

But I *claim* combining a series of horizontal heating tubes with a vertical flue or chimney, when said flue or chimney is combined with

an enclosing vertical casing, which has an enlargement at its upper end, entirely above the uppermost of the said heating tubes, substantially as set forth.

No. 18,216.—CHARLES B. WARRING, of Poughkeepsie, N. Y.—*Improvement in Illuminating Gas Apparatus*.—Patent dated September 15, 1857.—The pipe B passes through the top A of the retort to the bottom of the same, and is provided at its upper end with an eye-piece, through which the attendant can observe the color and degree of heat of the bottom of the retort; the gas passes through pipe L; M rises through the water in box E, and passes down through pipe H G, thence through the water in box D and pipe H¹ G¹ into the gas-holder.

Claim, 1st. The eye piece and tube in combination, substantially as described.

2d. The peculiar apparatus described for conveying the gas into the gas-holder.

No. 16,544.—JAMES HANSOR, of the Wandsworth Road, England.—*Gas Generating Apparatus*.—Patent dated February 3, 1857; England, March 21, 1854.—The vapors are generated in retorts C C, wherefrom they rise through pipes D D into retort E, where they are exposed to a high temperature to be converted into permanent gas. Dampers L L L serve to regulate the heat of the several retorts. I I are test-pipes, with stop-cocks connected to the final exit pipe of the retort E, for ascertaining whether the heat of the retort is of the proper degree to convert the vapors into gas; the test is the ignition and bright burning of the gas on the application of a light. J J are pipes for testing the vapors in the retorts C C.

Claim.—The pipes I and J and the dampers L, as combined with the retorts C and E, operating in the manner substantially as described, for the purpose of readily ascertaining and regulating the progress of the operation of gas making, as set forth.

No. 16,830.—ALONZO M. GILES, of Boston, Mass.—*Improved Gas Generator*.—Patent dated March 17, 1857.—In the engravings at E the retort is closed and separated from the mouth-piece C by a tight-fitting door, through which there are openings *g* corresponding to the extremities of the conduits D. By means of this door all passage from the gas and vapors from the retort to the mouth-piece is shut off, except through the conduits D, and the heat of the retort is rendered much more intense and uniform. This door is attached to the ordinary door F by means of rod *h*, the two being removed and replaced together. The gas formed at the rear end of the retort enters the conduits D at the point *f*, and any decomposed vapors and materials that arise from the colder end of the retort are forced to pass first into the hottest portion. Should any decomposed vapors remain mixed with the gas, they will be still more perfectly reduced during their passage through the conduits D.

Claim.—The inner door E, operating in the manner substantially as described, whereby the heat of the retort is rendered much more intense and uniform, as set forth. Second, the pipes D, in combina-

tion with the inner door E, arranged and operating in the manner substantially as set forth.

No. 17,309.—JAMES A. BRUCE, of Baltimore, Md., assignor to the MARYLAND PORTABLE GAS COMPANY, of same place.—*Improvement in Gas Generators*.—Patent dated May 12, 1857.—The oil from which the gas is to be generated is allowed to pass into the retort A, through pipe S; after the retort has been heated to a bright cherry-red heat, the oil is instantly converted into gas, which passes up through the perforated plate H and the purifying material G, by the angular pipe E, to the condenser B, and thence to the receiver. When the oil has thus run for some hours, the packing, the plate H, and the bottom of the retort become gummed by the impurities of the oil; and to remove these without letting the retort cool off, the flow of oil is turned, the stop-cock in the pipe F is opened, and the gas is allowed to pass off through the smoke-pipe c. By now opening valve a, and applying a match thereto, the gas in the smoke-pipe F burns off, the air being admitted by removing plug b of the retort A; the flame from above now descends into the retort, and burns off all the impurities which have collected therein.

The inventor says: I claim the new gas retort with smoke attachment, by which atmospheric air is admitted at the bottom to clean the retort and purifying material by combustion, substantially as set forth and represented. I do not intend to limit my claim to this or any particular form of retort.

No. 17,599.—EZRA W. WHITEHEAD and JAMES L. CONKLIN, of Newark, N. J.—*Improvement in Gas Generators*.—Patent dated June 16, 1857.—The material being placed in bucket f, the bucket is placed in the retort resting on the flanch d; and when the gas begins to form, it passes in the direction of the arrows into flue b, a, b¹, and escapes through pipe h to the condenser and washer.

Claim.—The construction and arrangement of the retort, as described, having two flues on opposite sides for strengthening the same, and leaving a larger portion of the walls of the retort for the direct action of the fire, in the manner and for the purposes specified.

No. 17,614.—NAPOLEON AUBIN, of Albany, N. Y.—*Improvement in Gas Generators*.—Patent dated June 23, 1857.—The operation of this charger is as follows: The gas-making materials in the cavity of the charger F, being exposed to the heat of the retort A, soon evolve hydro-carbon vapors, which, by their own pressure, pass down through the aperture k, and, coming in contact with the bottom of the retort, are there transformed into gas, which, by its sudden expansion, raises the charger F, which, by falling again into its position, expels the gas from the space in which it was generated; and thus a continuous oscillating motion of the charger F and cover B is produced, which forces the hydro-carbon vapors to come in contact with the red-hot bottom of the retort, and at the same time prevents the newly generated gas from remaining exposed to the red heat of the retort.

The inventor says: I do not claim the mixing of materials for

making gas, nor the introduction of gas-making materials into a retort by means of a charger, nor the described method of closing the retort, nor the introduction of highly heated steam into the retort; for such devices have been either known, used, or patented before. I *claim* the use of a charger arranged and operated substantially as set forth.

No. 17,704.—JOHN W. SMITH, of Washington, D. C.—*Improvement in Gas Generators*.—Patent dated June 30, 1857.—The gas formed by the decomposition of the oil rises in the several compartments formed by the partitions F, and passes to the receiver, forming currents which unite and divide alternately; and the arrangement of the openings i retards the currents and purifies the gas in its passage to the receiver, by causing the impurities to settle upon the retort and sides of the partition.

Claim.—The combination of the retort B with the partitions F, when the said partitions are furnished with openings i, arranged in such a manner that the oil or other fatty matter, and the gas produced by its decomposition, shall flow through the retort in currents crossing each other, and alternately dividing and uniting in the manner described, and for the purpose specified.

No. 17,981.—ALLAN POLLOCK, of Washington, D. C.—*Improvement in Gas Generators*.—Patent dated August 11, 1857.—When the apparatus is in operation, the gas passes through the vent-holes j into the spaces h and gas-chamber i, the lid l extending down to or near the top of said vent-holes; by this arrangement the gas finds an exit from the middle of the retort, and none but the pure and well distilled gas is drawn off, leaving the cruder portion for further distillation.

Claim.—First, the peculiar form and arrangement of the retort with the grooves for the passage of the gas from the vent holes of the canister to the gas chamber. Second, the canister, with the vent holes above described, by which I take the gas from the centre of the canister, the lid extending down to or near the top of said vent holes.

No. 18,184.—JOHN BUTLER, of Brooklyn, N. Y.—*Improvement in Gas Generators*.—Patent dated September 15, 1857.—A stream of carbon-hydrous material flows through tube E, which, falling directly upon the red hot fused metal F, is converted into gas, which, passing through the charcoal contained in basket C, receives a second heat while thus detained by the charcoal; from thence the gas passes directly to the purifier.

The inventor says: I am aware that a patent has been granted for the use of fused metals, by passing the products of the distillation of coal and other substances yielding carburetted hydrogen (gas) through said metals. I therefore disclaim the use of fused metals, fusible at a low state of temperature, for the purpose of passing the products of the destructive distillation of coal and other substances through said metals.

Nor do I claim said metals for bringing distilled carbon-hydrous vapors in immediate contact with the surface of the same.

Nor do I claim fused metal for the purpose of floating the carbonaceous matter usually deposited in retorts.

I *claim* generating illuminating gas in a retort over the surface of melted lead, or other fusible metal, in the manner set forth.

No. 18,414.—SALMON SKINNER, of Yonkers, N. Y.—*Improvement in Gas Generators*.—Patent dated October 13, 1857.—In the drawings, letters *c c* represent a basket or frame-work of iron, for the limestone or other matter; so that the cover may be removed and replaced without disturbance to the substances contained therein, and used to keep the upper chamber cool. Letters *d d* represent the siphon pipe, for introducing oil or any other substance for generating gas. Letters *b b* represent the pipe for the escape of the gas from the retort to the condenser or gasometer.

The inventor says: I *claim* making the upper part of my retort dome-shaped, or any equivalent shape that will radiate its own heat; and in combination with such a retort, the interior protecting vessel *c c* and contents, or their equivalents, for the purpose of preventing the upper chamber of the retort from becoming unduly heated, thereby shielding the gas generated in the lower portion from decomposition before it can escape to the gasometer.

No. 17,574.—AUGUSTUS A. HAYES, of Boston, Mass.—*Improvement in the Construction of Gas Generators*.—Patent dated June 16, 1857.—As the coal in the retort B becomes heated, the gas is generated and passes through the passage *a* into conduit A, and thence into stand pipe C. By passing off the gas through small eduction pipes which prevent a ready exit, the usual products of distillation do not form in the vessels, but instead thereof nearly pure gaseous matter and aqueous vapor charged with vapors of ammoniacal salts are produced. The conduit can be varied in size to make the retort adaptable to the decomposition of different kinds of coal by inserting a rod into the conduit A, by which its size is diminished.

Claim.—My improved gas retort, substantially as described and represented, that is, with only one chamber and with a compression conduit, arranged wholly or partially outside of the chamber of the retort, and so as to pass directly into the stand pipe, and have an entrance or opening into its front end, to be closed either by the door of the retort or by a separate small door, or its equivalent, as circumstances may require.

Also combining with the gas retort and its compression conduit a means, substantially as described, for diminishing the internal area of the passage of the gas through the conduit, in order to produce the amount of compression of the vapors in the chamber which may be required, according to the kind of coal or other material used; the retort by such means being adapted to the decomposition, in the manner set forth, of any bituminous coal or other gas-producing material.

No. 17,435.—C. B. LOVELESS, of Syracuse, N. Y.—*Improvement in Feeding Gas Generators*.—Patent dated June 2, 1857.—By opening

or closing the valve V, by means of hand-wheel *w*, the rosin in the feeder H may be let into the retort R through pipe *a*, while the gas rising through pipe *b* will exert such a pressure on the material in feeder H as to force the rosin into the retort R, when the valve V is opened.

The inventor says: I make no claim to cut-off valves broadly.

But I *claim*, as an improvement in portable gas apparatus, the connexion of feeder H with the retort R, by the arrangement of pipes *a* and *b*, when combined with the cut-off valve V, the entire arrangement operating substantially as set forth.

No. 18,109.—WARREN A. SIMONDS, of Boston, Mass.—*Improvement in Portable Gas Generators*.—Patent dated September 1, 1857.—The pipes B and C having become sufficiently heated, a jet of oil is forced through pipe L into pipe B, where it comes in contact with the heated metal and is converted into an imperfectly formed gas or vapor; thence this vapor passes through half-turn D into pipe C, where it is still further heated and converted into gas, which passes off through pipe F and cork G to the purifier.

Claim.—The tubular retorts B and C, of the form described, operating in the manner substantially as set forth, for the manufacture of oil gas.

No. 17,465.—CHARLES F. WERNER, New York, N. Y.—*Improvement in Wood Gas Generators*.—Patent dated June 2, 1857.—The wood from which the gas is to be generated is placed in the retort B, which is exposed to the heat of an oven A; the gas passes through pipe *a* into the cylinder C, and, passing below the lower edge of the partition C, escapes through pipe *b* to the condensor and purifier. As the heat from the oven A passes as well outside as inside of the retort B, the wood is decomposed equally in all parts of the retort.

Claim.—The arrangement of a movable boiler or retort B and cylinder C, being combined in the manner and for the purpose as described.

No. 16,682.—WARREN C. CHOATE and CHARLES N. TYLER, of Washington, D. C.—*Improvement in combining Hydrogen and Wood Gas*.—Patent dated February 24, 1857.—This improvement consists in combining with the gaseous products of the wood, as it distils over from the retort B, a stream of hydrogen gas in a volume sufficient to dilute or thin the gas to such a degree as to render it fit for illumination.

Claim.—Combining hydrogen gas with the gaseous products evolved from the dry distillation of wood, in the manner substantially as and for the purposes described.

No. 17,090.—JAMES O. HALSEY, of Essex county, New Jersey.—*Improvement in Portable Apparatus for Generating Illuminating Gas*.—Patent dated April 21, 1857.—The perforations I in the door of the air chamber B admit a draft to said air chamber, and the gases which may escape from the retort C, in process of filling said retort, are carried off, through the perforation H, and pass out through the flue Z; thus no gas will enter the room where the apparatus is in operation.

Claim.—The air chamber B, constructed and operating as described to allow both the retort to be charred while the fire is in operation, and to carry off the gas that escapes from the retort, and prevent its entering the room.

No. 16,591.—JAMES HANSOR, of the Wandsworth Road, England.—*Gas-making process.*—Patent dated February 10, 1857; England, April 21, 1856.—The inventor produces gas from the following composition: Peat, twelve parts by weight; resin of commerce, twelve parts; coal tar, eight parts; and resin oil, or other oleaginous matter, sixteen parts.

Claim.—The treatment of the compound gas fuel made in the manner described, and worked in the retort as set forth.

No. 18,648.—THOMAS I. PITT, of New York, N. Y.—*Improved Gas Meter Indicator.*—Patent dated November 17, 1857.—On the metal plate B is inserted the axis C, for the wheels A and A'. The wheel A is the registering dial which shows the tens, hundreds, and thousands in cubic feet. To the drum of the meter is securely attached the shaft I, working in proper bearings in the plates B and J; on this shaft there is an endless screw working in a pinion G on the shaft D. This shaft has proper bearings at *d d*, framed in pieces projecting sufficiently high to place the shaft in the proper position of the endless screw E, which is secured thereon to work the wheels A and A'. At one end of the shaft D there is placed a small registry wheel to indicate the cubic feet of gas consumed.

Claim.—The employment of a rotary indicator, constructed and operated substantially as described, and applied to gas meters to register the consumption of gas, as set forth.

No. 16,922.—HYAM JACOB HYAMS, of Stanhope street, Hampstead Road, England.—*Improvement in Dry Gas Meters.*—Patent dated March 31, 1857.—The gas is admitted to the cavity *r* in the circular rotating valve *m* from the supply pipe and the centre space *x*. The circular valve *m* is moved eccentrically, so as to uncover in rotation the several apertures *o, s, &c.*, whereby the gas passes through the valve from one part of the meter to another. The gas passes down through the passage *s* into the chamber *a*¹ of the meter, forcing outwards the diaphragm *b b*^{*} (fig. 1) towards the chamber *a*², thus expelling the gas from the latter through the passage *o*, whence it passes to the supply pipe of the burner. As the diaphragms *b* and *b*^{*} are operated by the pressure of the gas, motion is transmitted by means of the links *e f* and lever *g* to the vertical shaft *h*, which motion is transmitted by means of crank *i*, pitman *j*, and crank *k*, to shaft *l*, which operates the circular valve by means of eccentric *l*^{*}.

The inventor says: I do not intend to confine myself to the exact form and arrangement of parts shown and described, as they may be varied without departing from the nature and object of my invention.

But I *claim* connecting together the rigid parts of the movable diaphragms, substantially as specified, in order that they may act together, as described.

I also claim the construction and arrangement of the rotating circular valve, as shown.

No. 17,936.—O. S. LAWSON and A. A. STARR, of New York, N. Y.—*Improved Stop-cock Gas Regulator*.—Patent dated August 4, 1857.—

The gas enters the cock *F* through pipe *D*, and the conical plug *b* is caused to revolve with a certain velocity, and the gas enters the conical groove *F*, and escapes through the passages *e e'* into pipe *D'*; and the amount of gas to be burned is in proportion to the number of revolutions which the plug *b* makes in a given time.

Claim.—The cock *F*, with conical plug *b*, on which is cone-shaped groove *f* extending entirely around the same, in combination with the mechanical devices arranged and operating as described, and for the purpose of a portable gas apparatus for vessels, cars, &c.

No. 16,639.—JOHN H. COOPER, of Philadelphia, Pa.—*Improvement in Gas Regulators*.—Patent dated February 17, 1857.—In this regulator the spring is preserved from the deteriorating effects of the gas.

The inventor says: I do not claim the combination of valve spring and inverted cup; with the upper and lower chambers, the same having been in use for years.

But I *claim* placing the spring *p* regulating the valve within the latter, made hollow for the purpose, in order to prevent the contact of the gas with the spring, in the manner and for the purpose substantially as specified.

No. 16,951.—CHARLES J. HALSTED and JOHN COEYMAN, of New York, N. Y., assignors to CHARLES N. DECKER, FRANCIS GODINE, and CHARLES J. HALSTED, of the same place.—*Improved Gas Regulator*.—Patent dated March 31, 1857.—This gas regulator is attached to the main or service pipe leading to the meter. When the gas is lighted, it is drawn through the regulator and meter, and passes through the gauze wire screen *G* and perforated plate *B*, upon the valve *C* pressing said valve downwards until the gas escapes over the edge of valve *C*; it then passes down through the perforated plate *D*, thence through the lower gauze wire screen *G* to the meter and burner. When the burner is closed, drawing no gas from the regulator, the valve *C* prevents any escape of gas, as its edge bears tightly against plate *B*.

The inventors say: We are aware that a double compensating valve, actuated through the pressure of gas on a flexible diaphragm, has been used in a regulator. This we do not claim.

But we *claim* a gas regulator, to be located between the meter and main gas pipe, and composed of the perforated plate *B*, having a flange upon it provided with external and internal screw threads, and a plate *D*, similarly perforated and provided with a screw which runs into said internal screw thread on the plate *D*, and adjustable therein by its stem *H*; when said plates are combined with a single valve *C* and adjustable spring *E*, and the whole arranged within the shell *A*, substantially in the manner and for the purpose set forth.

No. 17,079.—ROBERT CORNELIUS, of Philadelphia, Pa.—*Improvement in Gas Regulators*.—Patent dated April 21, 1857.—The operation of this regulator is as follows: the gas enters at G from the main pipe and passes into chamber I; from I it passes through at O and O¹ to U, and thence to H, in the direction of the arrows. A portion of the gas also passes up through passage V V¹ and W W¹ into the interior of spring box E F, and thence through aperture T, down the tube K L, and between R R¹ and S S¹ into the chamber U, where it meets the gas flowing through O O¹. Thus when no burners are lighted on H, the pressure of the gas in I is communicated through V W and V¹ W¹ to the interior of spring box E F; and the spring plates E F being separated to their greatest extent, the valves O O¹ and S S¹ are drawn up almost to their seats. When the burner is lighted the gas flows through at P P¹, and also at R R¹; and this flow diminishes the pressure which was distending E F, and that box contracting slightly, the rod K L is pushed down on O O¹, and R R¹ is slightly opened.

Claim.—First, the employment of a spring box or boxes composed of two plates of corrugated metal, as shown, and placed intermediately, so as to communicate, on one hand, with the gas in the main chamber I, and, on the other hand, with the branch chamber U, being separated by throttled openings S S¹ and V V¹, in the manner and for the purpose set forth.

Second, the employment of the valve R R¹, in combination with the spring box for regulating the flow of gas, these being constructed and operating as and for the purposes substantially as described.

No. 17,317.—ROBERT CORNELIUS, of Philadelphia, Pennsylvania.—*Improvement in Gas Regulators*.—Patent dated May 19, 1857.—This is an improvement on an apparatus patented to the inventor, 21st April, 1857. The tube 12 13 causes the gas in the chambers 1, 2, 6, 5, to be of the same pressure as in the main pipe at G. As the pressure in the pipe G increases, the pressure on disk 5 6 increases and forces down spring 5 6 and stem and valve 7 8, contracting the passage for the escape of gas through 10 11 into the intermediate chamber R. As the quantity of gas which passes through 10 11 is checked, it tends in so much to diminish the pressure in the chamber U, which will permit an increased flow of gas through T L; and as the opening 10 11 is diminished, it will tend to diminish the pressure in the interior of the spring box E F, which permits the opening O O¹ to be increased by contraction of spring box E F forcing down the hollow stem K L. Thus, as the pressure in the main chamber G increases, the valve O O¹ is prevented from being too much closed by the counteraction of the gas through the tube 12 13 and spring box 5 6.

Claim.—The employment of the auxiliary spring box 5 6, communicating directly with the main chamber G, in combination with the valve 10 11, communicating with the middle chamber, for the purpose of preserving the uniform action of my regulator under considerable variation in the main pressure.

No. 17,671.—JOHN H. COOPER, of Philadelphia, Pa.—*Improvement in Gas Regulators*.—Patent dated June 30, 1857.—The gas enters this regulator through pipe G; and when more than the desired quantity of gas is forced through said pipe, it passes through the annular opening between valve H and its seat and depresses cup C, which movement brings down valve H, thus reducing the pressure of the gas.

The inventor says: I do not claim the inverted cup spring and valve, as such are common to other gas regulators.

Neither do I claim broadly the hinging of the cup and valve to the interior of the casing.

But I *claim* the combination of the inverted cup C, arm D, and valve H, when both valve and cup are attached directly and permanently to an arm hinged to the interior of the casing, substantially in the manner set forth and for the purpose specified.

No. 18,008.—JOHN H. COOPER, of Philadelphia, Pa.—*Improvement in Gas Regulators*.—Patent dated August 18, 1857.—When the pressure of the gas from the meter is excessive, that excess of gas acts upon the top of the inverted cup C so as to depress the same, and with it the valve *m*, thereby contracting the opening for the entrance of gas to the interior of the casing.

The inventor says: I do not desire to claim exclusively the employment, in connexion with a gas regulator, of a double reservoir and double rimmed inverted cup.

Neither do I claim broadly the employment of an adjustable spring for balancing the pressure on the cup.

But I *claim* the double rimmed inverted cup C with an inclined surface, said cup having a valve *m*, and an opening formed by the inner rim *h*, when the said opening and valve are concentric with the inlet formed by the inner flanges *e* of the casing.

No. 18,103.—JOHN H. POWERS, of Newark, N. J.—*Improvement in Gas Regulators*.—Patent dated September 1, 1857.—The gas enters regulator at E, and escapes through the unsubmerged portions of the openings *b* of valve D into chamber A, and thence to the outlet F. When the street pressure is low, the pressure in chamber A and under cup B is but little; the cup occupies a low position, and, by its connexion with valve D, holds up said valve, but little submerged, and allows a free supply of gas.

The inventor says: I do not claim the connexion of the valve with the inverted pressure cup by means of a lever.

But I *claim* the arrangement of the inverted cup-shaped valve D and its seat of quicksilver, and the lever H which connects the said valve with the pressure cup, all within the pressure cup substantially as described.

No. 16,651.—MICHAEL J. MILLER, of St. Louis, Mo.—*Improvement in Gas Retorts*.—Patent dated February 17, 1857.—As the gas begins to evolve, and rises to the top of the retort, it would escape if the pipe was in the top of the retort. But the pipe A being applied at the bottom, a more perfect decomposition takes place; because the gas in

returning must pass through the fire and come in contact with the bottom of the retort before it can escape in the educting pipe A.

Claim.—The pipe A, inserted so as to receive the gas at the bottom of the retort, as shown and described.

No. 18,134.—SAUNDERS COATES, of New York, N. Y.—*Improvement in Gas Retorts.*—Patent dated September 8, 1857.—When this retort has attained the proper degree of heat for the admission of the oil, the lead *b* will have become melted, and the iron plate *c* will be found floating upon the top; this arrangement permits the use of retorts in which the sides and bottom are cast in the same thickness.

Claim.—Forming a false bottom for gas retorts from metal of dissimilar degrees of fusibility, viz: one such as lead in combination with one such as iron, resting upon the easily fusible metal, substantially in the manner and for the purpose described.

No. 18,926.—ABIEL PEVEY, of Lowell, Mass.—*Improvement in Casting Gas Retorts.*—Patent dated December 22, 1857.—The nature of this invention consists in constructing, arranging, and operating the flask so as to allow of using the heat generated and contained in it, by pouring or casting one retort, to set or dry the loam used for the next mould so as to give the desired form, thereby enabling the moulder to cast two retorts a day. And in constructing, self-centralizing, and suspending the cone so that it may be perfectly true with the inside of the flask, and leave consequently every part of the retort of an equal or desired thickness.

The inventor says: I disclaim the general principle of the formation of a mould without patterns by sweeping, or without flasks; as such is well known and forms no part of my claim.

Neither do I claim hanging cores in the cope or setting them for casting kettles in the ordinary manner; as that also forms no part whatever of my invention or claim.

But I *claim* my described flask, composed of the several parts A B C, and former H and I, constructed and relatively arranged and operated for moulding the retort, and for self-centralizing and setting the core, essentially in the manner as set forth and described.

No. 18,791.—SIMMONS W. CARPENTER, of Yonkers, N. Y., assignor to WILLIAM W. WOODWORTH, of Yonkers, N. Y.—*Improvement in Cleaning Gas Retorts.*—Patent dated December 1, 1857.—A is the retort; B C and D the pipes needing to be cleaned. By this invention the retort is heated until it is a bright cherry red; the stop cock E is then turned so as to shut off the connexion through the same to the gasometer O. Water is then introduced slowly into the retort A, through the siphon pipe S. The water on reaching the heated retort is instantly converted into steam, and by the force of its own pressure rushes through the pipes B C and D into the siphon box, and escapes through the siphon P, thus thoroughly cleaning every part of the gas apparatus.

The inventor says: I do not claim as my invention the principle of the use of steam or stame as a cleanser of gas apparatus.

But I *claim* the method or process of the introduction of water directly into the heated retort, (the charge being drawn or exhausted,) there to be converted into steam or stame, free to unite with and remove the carbonaceous or other deposite contained in the retort or pipes, substantially in the manner set forth.

No. 17,068.—N. AUBIN, of Albany, N. Y.—*Improvement in Closing Gas Retorts*.—Patent dated April 21, 1857.—The cover B is secured to the retort A, by filling the groove *a* with a fusible alloy which will melt at a low temperature; and the cover B is then placed so that its rim *a*¹ dips into the alloy in said groove, thus forming a hermetic packing.

The inventor says: I do not claim the box for introducing the materials for generating gas; but I *claim* the cover B, with the compound rim *a*¹, fitting into the groove *a*, for the purposes set forth.

No. 18,154.—CHARLES MONSON, of New Haven, Conn.—*Improvement in Extension Gas Tubes*.—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I claim not the device of extension levers by itself, nor any particular form of tube by itself.

But I *claim* the combination of levers and tube or tubes, substantially as set forth.

The use and application to a gas tube of jointed extension levers, like, or operating substantially upon the principle of, those I have described.

The use and application thereof, as an instrument for extending the reach and contracting the reach of a gas tube, or of gas tubes, of whatever form, and for holding and guiding the same.

And finally, the use of said levers as an instrument for relieving or preventing the strain of traction or of weight upon said gas tube, and upon the joints thereof, substantially as shown.

No. 17,214.—ROBERT HAERING, of New York, N. Y.—*Improved Process for Purifying Gutta Percha*.—Patent dated May 5, 1857.—One pound of caustic potash is dissolved in two gallons of water, and to this is added an ether formed from a solution of four ounces of chloride of lime in eight ounces of alcohol. Fifteen pounds of crude gutta percha are put into this mixture, and the whole is then heated to the boiling point; after which the gutta percha is removed from the liquor and treated between rollers under water, in the ordinary manner.

Claim.—The method of purifying gutta percha, by means of the ether and alkali used substantially as set forth.

No. 17,649.—CHARLES WINSLOW, of Lynn, Mass.—*Improvement in Preparing Elastic India Rubber Cloth*.—Patent dated June 23, 1857. This invention consists in marking on elastic cloth which presents an even smooth surface parallel lines in the direction of the shortest diagonal of the meshes formed by the thread of the cloth, for the pur-

pose of guiding the workmen in cutting said cloth when it is to be worked up.

Claim.—The method of preparing elastic cloth for use by the application thereto of parallel lines in the direction of the shortest diagonal of the meshes formed by the threads of the cloth.

No. 16,601.—GULIELMUS B. MILLERD, of Colchester, Conn.—*Improvement in Preparing India Rubber Cloth.*—Patent dated February 10, 1857.—The India rubber sheet *a a* is wound on cylinder B, and passes over rollers D C and spreading bar E under buffing cylinder A, and over drawing cylinder F on to receiving cylinder G.

The inventor says: I do not claim the process described of boiling caoutchouc in alkali to desulphurize its surface, nor the buffing or grinding of its surface to produce roughness thereon.

Neither do I claim the attachment of a sheet of caoutchouc to cloth, either in an extended state to produce an elastic fabric, or in a free state to produce an unelastic fabric, where the union is effected by the application of cement to the caoutchouc, or by subsequent vulcanization.

But I *claim* the application of a sheet of vulcanized caoutchouc, previously prepared by buffing its surface or surfaces substantially as described, to a sheet of cloth or between two sheets of cloth previously prepared by being thinly coated with an unvulcanizable solution of caoutchouc on the tangent side or sides, the sheet of caoutchouc being applied in an extended state to produce an extensible and elastic, or in a free state to produce an inelastic fabric by simple pressure, and without the use of cement or subsequent vulcanization.

No. 17,295.—CONRAD POPPENHUSEN and LUDWIG HELD, of Brooklyn, N. Y.—*Improvement in Devulcanizing India Rubber.*—Patent dated May 12, 1857; antedated April 1, 1857.—A mixture of powdered sal ammoniac or sulphate of ammonia and lime, all in a dry state, are heated in a retort, and the dry gaseous ammonia generated by this process is conducted by means of a pipe to near the bottom of the vessel containing the softened India rubber and solvent. The dry gas is readily absorbed; the India rubber swells up and forms at last by the aid of constant stirring with the solvent a homogeneous gelatinous mass, which may be applied for practical purposes in the same way as usually solutions of the natural gums mixed with sulphur are used.

The inventors say: We do not claim the treating of vulcanized India rubber, gutta percha, and allied gums, or their compounds with any solvents of the native gums alone, as their effect on such vulcanized gums is well known.

But we *claim* the process described of rendering vulcanized India rubber, gutta percha, or allied gums, or their compounds, soluble and plastic, by the joint action of the solvents mentioned and dry ammonia gas.

No. 17,029.—THOMAS B. DE FOREST, of Birmingham, Conn.—*Improvement in Machinery for Manufacturing India Rubber Hose.*—Patent dated April 14, 1857.—The principal features of this invention re-

lating to the first five claims will be readily understood by reference to these claims and the engravings. The arrangement of the parts referred to in the sixth claim relates to the manner of winding the fillets in a spiral shape around the mandrel P, and to the manner of feeding said fillets to the machine.

The inventor says: I do not claim generally the combination of a rotating mandrel, pressure rollers, and guide rollers, for the purpose of forming India rubber hose.

But I *claim*, first, the employment of a pressure roller or rollers *e e* of a length equal to a comparatively small portion of the length of the mandrel, when such roller or rollers, or the mandrel, have a longitudinal movement, substantially as and for the purpose set forth.

Second, giving the mandrel a rotary motion independently of the pressure rollers, and causing the latter to derive motion from the mandrel, substantially as and for the purpose set forth.

Third, making the pressure rollers of a tapering form, so as to exert less pressure nearest where the laying or winding of the fillet or fillets takes place, and a gradually increasing pressure as the wound fillet advances further between them, substantially as described for the purpose set forth.

Fourth, the mode of operating the mandrel and the pressure and guide rollers, whereby the fillets are first wound upon the mandrel to form the hose, and the hose is afterwards pushed longitudinally off the mandrel, substantially as described, viz: by giving rotary motion to the mandrel while the carriage which contains or supports the rollers moves in one direction longitudinally in relation to the mandrel, and suspending the said rotatory motion while the rollers move in the opposite direction.

Fifth, the combination of the clamps *a a*, flanged collars *b b*, pins or screws *x*, springs *y y*, and elliptic collars *z*, applied and operating in the head stock C' to clamp the hose to the mandrel and liberate it therefrom, substantially as set forth.

Sixth, the combination of the two spring clutches P P¹ and Q Q, the levers P Q, the spring bolts *p q*, the tappets *t u u'*, and the sliding bar T, the whole operating together, as described to cause the roller carriage to be driven in opposite directions alternately.

No. 17,037.—ROBERT HAERING, of New York, N. Y.—*Improvement in Treating Gutta Percha*.—Patent dated April 14, 1857.—One pound of India rubber or gutta percha having been mixed with eight ounces of sulphur in the usual manner, eight ounces of pipe clay is added to it; and when distributed evenly, the mass may be vulcanized in from four to seven hours at a temperature of from 230 to 300 degrees Fahrenheit in the ordinary manner, when the clay will rapidly absorb all gases which are evolved by the action of the sulphur, thus enabling the operator to manufacture articles of large diameters, which are uniformly dense and compact throughout.

Claim.—In vulcanizing India rubber and similar gums the use of pipe-clay, or its equivalent, for the object set forth, in combination with sulphur, substantially in the manner and for the purpose described.

No. 17,931.—Dr. LUDWIG HELD, of Brooklyn, N. Y.—*Improvement in Facitious Ivory*.—Patent dated August 4, 1857.—Finely ground ivory dust, bones, or vegetable matter are digested with about one-half of their weight of common chlorohydric acid, till the jelly-like appearance of the mass indicates that the inorganic constituents of the bony substance are decomposed. To this is added a solution of chloride of zinc, which has been digested with one-half of its weight of oxyd of zinc, and the mixture is heated and stirred to a thick doughy mass. To this is then added finely powdered bleached shellac or gum copal, and the whole is kneaded together till it becomes hard and stiff. The material can now be pressed in heated metallic moulds to any desired shape, and will have the appearance and hardness of ivory.

The inventor says: I do not exactly confine myself to any of the proportions of materials mentioned above, nor to any of the gums enumerated; and I do not claim the combining of resinous substances or gums with bone or ivory powder, and with metallic oxyds, as has been, to my knowledge, prescribed for plastic compounds resembling ivory.

But I *claim* the ivory-like plastic compound, produced principally by a combination of cartilaginous substance or vegetable fibre with basic chloride of zinc and gum resins prepared and applied in the manner substantially as described.

No. 17,949.—WILLIAM M. WELLING, of New York, N. Y.—*Improvement in Facitious Ivory*.—Patent dated August 4, 1857.—10 ounces of white shellac, 4½ ounces of impalpable white (acetate of lead precipitated by sulphuric acid), 8 ounces of ivory dust, and 5 ounces of camphor are reduced to a powder, are heated and thoroughly incorporated; the mass is then brought into heated moulds to be manufactured into various articles.

Claim.—Forming artificial ivory by thoroughly mixing and combining the articles specified, or others having equivalent properties, while under the operation of heat, substantially as specified.

No. 17,519.—JULIUS A. ROTH, of Philadelphia, Pa.—*Improvement in Making Lamp-Black*.—Patent dated June 9, 1857.—The retort A is charged with rosin through the door *a*, which rosin is ignited in said retort—the combustion of the rosin being kept up by a blast of air forced through pipe *b*. The smoke passes through flue D E into the flues *c d e* of the water tank F, and the lamp-black is forced into the water *f* of said tank; but owing to its oily nature it is lifted to the surface of the water, whence it may be run into a suitable receptacle.

Claim.—Supplying lamp-black ovens or the flues connected therewith with air pipes, substantially as described.

Also, the combination of the discharging flue or pipe with a tank or reservoir filled with water, for the purpose substantially as described.

No. 18,271.—JOHN J. BATE, of Brooklyn, N. Y.—*Improvement in Lard-Rendering Kettles*.—Patent dated September 29, 1857.—A is the outer shell which surrounds and encloses the trying kettle, which may be supported or enclosed by brick, wood, or some other suitable covering the better to confine the heat. B is the trying kettle, fastened

and secured to the shell A by being bolted through suitable flanges formed on the top edge of each. It is made enough smaller in diameter and less in height than the shell A, to form a space between the two into which steam can be introduced and circulated to heat the contents of the trying kettle. C is a detachable cover to the kettle, which may be removed at pleasure for the purpose of cleansing or filling the kettle. This cover has an opening in it, closed by a small cover, through which the progress of the operation of the kettle may be watched. E is a pipe from a steam boiler, which is connected to the bottom of the shell A at its central point, so that the steam introduced through it shall diffuse itself equally throughout the space between the kettle and shell. It has a stop-cock inserted in it, for the purpose of shutting off the steam from the boiler, when desired. F is the condensed water pipe, connected with the shell at its bottom and to the boiler below the water line, through which the water formed by the condensation of steam is returned to the boiler. G is a poppet-valve inserted in the upper part of the shell, which opens inwardly and serves both as a snifting and vacuum valve. It is attached to a weighted lever, so as to produce a slight pressure upon the valve, which opens it when the pressure of steam between the kettle and the shell is reduced below the pressure put upon the valve. H is a stop-cock at the bottom of the kettle, through which its contents may be withdrawn.

The inventor says he does not claim the construction and combination of the shell as described, nor the application and use of steam to heat the kettle, nor the use of a snifting valve to permit the air confined in the space around the kettle to be removed or discharged, nor the use of the vacuum valve to permit the air to fill the space around the kettle when a vacuum shall be formed there by the condensation of steam contained therein; but he *claims* the combination of the valve G, acting both as a snifting and a vacuum valve, with the shell A and kettle B, as and for the purposes set forth.

No. 18,622.—ALLAN LAPHAM, of Brooklyn, N. Y., assignor to Himself and JOSEPH B. BENNETT, of Brooklyn, N. Y.—*Improvement in Lard-Rendering Kettles*.—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I am aware of the patent of J. J. Bate, October 21, 1856, wherein is claimed the combination of a double steam kettle with an annular chamber; and I therefore disclaim any part of his invention.

I claim, in combination with a steam kettle, a vertical hollow steam cylinder supported upon iron pipes D D, as described; whereby I am enabled to concentrate great heat upon the material rendering, thereby saving fuel, and making the kettle easy of access for the purpose of cleaning, as set forth and specified.

No. 16,766.—ANSON WOLCOTT and A. SPENCER WOLCOTT, of East Bloomfield, N. Y.—*Improved Devices for Aging Liquors*.—Patent dated March 3, 1857.—The liquor cask E is hung up in a suitably heated apartment, and gently swung to and fro by means of a revol-

ing crank H and the intermediate connecting parts, G, F, I, D, the rod D being fastened to the cask.

Claim.—The employment of swinging shelves, or their equivalents, for the purpose of gently agitating the liquors, while they are exposed to a moderate heat, substantially as described.

No. 17,984.—JESSE SHILLING, of Troy, Ohio.—*Improvement in Mash Cooling Machines.*—Patent dated August 11, 1857.—The mash, after being scalded, is cooled down to the proper temperature by means of a blast, which is generated by the fan in box H; said blast passing through pipe G into the hollow arms *b*, and down the hollow tube *c* into the mash.

Claim.—The hollow arms *b*, with the hollow teeth *c* attached, said teeth, some or all, having lateral shares or projections *f* attached, the hollow arms *b* being attached to a rotating shaft B, and communicating with a pipe G, which is connected with a fan box H, the whole being arranged substantially as described for the purposes set forth.

No. 18,160.—WILLIAM REISIG, of Astoria, N. Y.—*Improvement in Wash Mixtures for Woollens, &c.*—Patent dated September 8, 1857.—This mixture is composed of 24 pounds of carbonate of soda, 24 pounds of common liquid ammonia, and two pounds of common whale oil soap, which are mixed in a proper vessel with two hundred pounds of water.

The inventor says: I do not claim any hard or solid soapy compound containing ammonia or soda ash; but I do claim an aqueous saponaceous composition, with the alkalies in excess, as described, and in about the proportions specified, for the purposes set forth.

No. 18,279.—JOSEPH W. HARMON, of Elizabethtown, N. J.—*Improvement in Factitious Oils.*—Patent dated September 29, 1857.—This compound is thus described by the patentee: I take the residuum of the stills of candle factories as the important basis of my compound, consisting of certain products from palm oil, lard, tallow, and other greasy matters, remaining after the materials have been acidified, washed, and the stearic acid has been taken off; the remainder being a thick and heavy residuum, above named, which is employed and made valuable in the following combination: To one gallon of this residuum I add one gallon of resin oil; these I heat together, melting and mixing the whole mass into a homogeneous compound; to which I add, either before or after melting, three-fourths of a pound of litharge and one pound and a half of umber, together with three pounds of slaked lime and three pounds of oil cake; this whole mass, when perfectly mixed and boiled properly, I allow to stand and cool and settle, after which I bring it to a proper consistency, by thinning it with the spirits of turpentine, to be used as a substitute for linseed oil.

Claim.—The inventor says: I do not wish to be understood as confining myself to the exact proportions described, as the quantity of the materials will require judgment in the compounding; but those named I have used with the most perfect success.

I claim the employment of the residuum of candle manufactories as named, compounded with the ingredients set forth, in the manufacture of a compound oil, as specified.

No. 17,181.—HALVOR HALVORSON, of Cambridge, Mass., assignor to Himself, EDWARD H. BAKER, J. F. ATHEARU, and W. TRACEY EUSTIS, of Boston, Mass.—*Improvement in Purifying Oils*.—Patent dated April 28, 1857.—Pork or any similar solid fat substance is submitted to a steam bath, barely sufficient to fuse the stearine; the melted portion is then skimmed off in another vessel, and while yet warm an alcoholic solution of an alkali is applied. On this solution with the oil, saponification instantly ensues, which leaves a clear, limpid, homogeneous mass for subsequent treatment.

Claim.—I do not claim clarifying oils by means of caustic lye, and subsequently washing out the stearine soap by means of alcohol.

But I *claim*, in the process of manufacturing or purifying oils, the employment of alcoholic solutions of alkali, in the manner substantially as set forth.

No. 19,006.—JOHN M. MERRYMON, of Logansport, Ind., assignor to Himself and J. H. JORDAN, of Attica, Ind.—*Paint Compound*.—Patent dated December 29, 1857.—The essential materials of which this compound is composed are anhydrous, or what is commonly known as unslaked lime and resin or gum turpentine.

In preparing this article, a given quantity of unslaked lime, say thirty pounds or half a bushel, is placed in a strong vessel or pot; to which is added about two and a half or three pounds of common resin, coarsely powdered, or if gum turpentine is used instead of resin, a somewhat less quantity is used; then a sufficient quantity of water to cover the whole is poured into the vessel. After this the whole should be covered to confine the heat and steam arising from the process of slaking, and the action allowed to proceed without disturbance until it ceases, which soon takes place, when the compound will be found in the form of a soft, white mass, the resin during the process having united with the lime.

Claim.—The combination of quicklime and resin for a paint material, in the manner and for the purposes set forth.

No. 18,183.—WILLIAM BUTCHER and WILLIAM A. BUTCHER, of Philadelphia, Pa.—*Improvement in India Rubber Paint*.—Patent dated September 15, 1857.—One gallon of linseed oil, and from eight to twelve pounds of crude India rubber, are boiled until the rubber is entirely dissolved; this preparation is then ground in a pain tmill, with any desired color, and is then thinned with painter's oil to the proper consistency, when it is ready for use.

Claim.—The composition prepared and composed of the materials as described, for the purpose of making water-proof paint.

No. 18,794.—ISAAC GATTMAN, of Philadelphia, Pa., assignor to Himself, JACOB BREINIG, and DAVID E. BREINIG, of Philadelphia, Pa.—*Improved Paint Vehicle*.—Patent dated December 1, 1857.—This

invention consists in the employment, as a substitute for oil in thinning paints, of a solution of the alkaline salts of the fatty acids, (oleate, margarate, stearate of potash, soda, and like substances,) in order that paints thus thinned may spread easier, cover better, dry quicker, be free from all cracks when dry, at a less cost than paints thinned with oil.

The inventor says: I do not claim exclusively the use of watery solutions for mixing paints.

But I *claim* the employment of the alkaline salts of the fatty acids, oleate, margarate, stearate of potash, soda, and like substances, in combination with rosin and oil, as a thinner for paints instead of oil, substantially in the manner set forth and for the purpose specified.

No. 18,538.—WILLIAM H. DOLSON, of New York, N. Y.—*Improvement in Apparatus for Mixing and Grinding Oil Paints*.—Patent dated November 3, 1857.—This invention operates as follows: The pigment and oil being placed in the vat A, and the gate B in the side of the vat being shut, motion is given to the shaft D and the belt C, and the beaters in the vat are rotated by the bands *d* and *e* until the pigment and oil are thoroughly mixed. The grinding stones are now put in motion, the gate B is raised to a suitable height, and a stream of the mixed pigment is forced out by the action of the beaters upon the belt C, by which it is promptly drawn away from the gate and conveyed to the scraper G, which detaches it from the belt and permits it to run into the eye of the upper stone of the grinder in a continuous stream. The rate at which the pigment is thus fed into the grinder may be regulated by varying the height to which the gate B is raised.

The inventor says: I *claim* the combination of the mixer A and grinder F, with an intermediate endless belt C and scraper G, the whole arranged as set forth.

No. 17,865.—JAMES C. AYER, of Lowell, Mass.—*Improvement in Pill Machines*.—Patent dated July 28, 1857.—The materials from which the pills are to be made having been placed in cylinder H, wheel D is turned, and plunger A² forces a cylindrical rod D² of said material out through passage *e* and on to apron I. The knife F², actuated by cam M, cuts these rods to the requisite length; and then they are placed by hand upon and between the cylinders F G, by which they are formed into globules.

Claim.—The corrugated or grooved globule cylinders F and G, or their equivalents, for forming the rods of mass or semi-solid material into globules, when constructed, arranged, and operated essentially in the manner and for the purposes set forth. Also, the cylinder H, plunger A², and screw K, for forming the round rods D² of the desired size, arranged and operated substantially in the manner and for the purposes set forth.

Also, the knife F², or its equivalent, for cutting the rods D² of semi-solid substance the desired length; so arranged, as specified, that it will cut or sever the rods D², without its sticking to them, essentially in the manner and for the purposes set forth.

No. 17,291.—ANTOINE MURTINEDDU, of Marseilles, France.—*Improved Blasting Powder*.—Patent dated May 12, 1857.—This powder is composed of the following substances: 200 pounds of sulphur; 200 pounds of saltpetre; 100 pounds of saw-dust; 100 pounds of horse-dung; 20 pounds of salt. The saltpetre and salt are melted with a sufficient quantity of water at a brisk heat, and eight pounds of molasses are then added to every two hundred pounds of saltpetre and twenty pounds of salt. The fusion being accomplished, the whole is thrown upon the mass of compound previously prepared, and mixed in the above named proportions; and when thoroughly incorporated, it is exposed to a gentle heat, for the purpose of drying.

Claim.—The composition of matter herein specified.

No. 16,580.—ELISHA B. DODSON, of Reading, Pa.—*Improved Gunpowder*.—Patent dated February 10, 1857.—The inventor pulverizes white ash anthracite coal, keeps this powder during twelve months in a dry place and freely exposed to the air, and then mixes it with pulverized nitrate of potash and pure sulphur, in the following proportions: Nitrate of potash, sixty parts; coal powder, ten parts; sulphur, ten parts. He then moistens the mixture with soft water, grinds it for at least twelve hours, presses the mass afterwards into cakes, and then granulates these cakes.

Claim.—The treatment of mineral coal, as described, preparatory to using the same, as a substitute for charcoal in the manufacture of gunpowder and blasting powder, as set forth.

No. 18,724.—OBADIAH RICH, of Cambridge, Mass., assignor to PETER COOPER, of New York, N. Y.—*Improvement in Preparing Glue Stock*.—Patent dated November 24, 1857.—The first part of this invention consists in the use of soda or potash, instead of lime, as heretofore used, for the purpose of removing the blood, hair, and other impurities from the stock or glue pieces, previous to boiling the same into glue; and the second part consists in the use of mineral acid for the purpose of neutralizing the soda or potash employed to remove the blood and other impurities from the stock or glue pieces.

Claim.—The inventor says: I claim the cleansing of glue stock pieces, and preparing them for the manufacture of glue by the use of soda or potash, as set forth.

I also claim, in combination with the above, the use of a mineral acid for the purpose of effectually removing and neutralizing the alkali in the stock so prepared, as set forth.

No. 17,610.—JOHN W. PERRY, of Boston, Mass., assignor to JAMES W. GATES.—*Improvement in Preparing Liquid Rose-Pink*.—Patent dated June 16, 1857.—One quarter of a pound of potash is dissolved in one gallon of water, and one quarter of a pound of red saunders wood is added thereto; when the color of the wood is extracted, two and a half pounds of gum shellac are added and dissolved therein over a quick fire; the mixture is then ready to be used on a ground work made with log-wood stain.

Claim.—The combination of the ingredients described for producing

a transparent liquid rose-pink, to be used in imitating rose-wood, &c., the same consisting of potash, ground red saunders wood, and gum shellac and water, mixed substantially in the proportions described.

No. 16,480.—ROBERT GRANT, of Brooklyn, N. Y.—*Process for Making Illuminating Gas*.—Patent dated January 27, 1857.—The nature of this invention consists in the use of fused metals *m*, in connexion with a suitable retort *d*, so constructed as to pass distilled carbonohydrous vapors in contact with the surface of such fused metals, thereby facilitating the production of carburetted hydrogen gas, by presenting to the material to be formed into gas a fluid red hot metallic surface.

Claim.—Passing the products of the destructive distillation of coal and other substances yielding carburetted hydrogen gas through fused metals, fusible at a low temperature, in the manner and for the purpose substantially as described.

No. 18,409.—E. G. POMEROY, of Philadelphia, Pa.—*Improved Process of Coating Iron*.—Patent dated October 13, 1857.—The nature of this improved process consists in uniting copper or other metals, such as gold, silver, nickel, zinc, tin, antimony, bismuth, and other alloys with the surface of iron.

The claim of the inventor gives an idea of his improved process.

Claim.—The inventor says: I *claim* the practical use and application of the described solution of hydrated sulphate of iron and copper brought in contact with the surface of the iron, in conjunction with the heat of the melted metal in the bath described, thereby producing a molecular separation of the particles of the iron, giving to them the susceptibility of forming a perfect flowing union or fusion together with the aforesaid metals in the bath in such a substantial manner as entirely to exclude a galvanic cement between the iron and the surrounding alloys, or any or either of them.

No. 18,244.—HENRY HANNEN, of Dubuque, Iowa.—*Improvement in the Process of Making White Lead*.—Patent dated September 22, 1857.—This improvement consists in subjecting the lead to the action of steam and atmospheric air for the purpose of oxydation, then to the vapor of acetic acid in order to form the sub-acetate, and afterwards to the action of carbonic acid, alternately and successively, until the operation is complete; whereby the metal becomes carbonated in a more speedy manner than when it is exposed to the action of the air, vapor of hydrated acetic acid, and carbonic acid conjointly. The drawing (figure 1) represents the plan of an apparatus suitable for carrying this improvement into effect: the top of one chamber *A* being removed to exhibit the arrangement of the parts of the interior; the top and slats *b* of another chamber *A'*, for the support of the lead to be carbonated, being removed to show the arrangement of the pipes for the admission of the steam and vapor of acetic acid.

The inventor says: I *claim* subjecting the lead and compounds formed therefrom by the agents employed for this purpose to the action of steam and air, vapor of acetic acid, and carbonic acid gas, alternately and successively until the process is complete, in the manner substantially as and for the purposes set forth.

No. 17,237.—CHARLES STEARNS, of New York, N. Y.—*Improved Process of Preparing Greensand Marl as a Fertilizer of Lands.*—Patent dated May 5, 1857.—The marl is first washed by agitation with water, which separates the alumina and useless earthy matter, leaving the greensand in a pure state. The greensand is then dried and pulverized and mixed with night soil and sulphate of lime, to which is then added a suitable amount of ammonia, when it is ready for use. The proportions are about six hundred pounds of night soil and one hundred pounds of sulphate of lime to one thousand pounds of greensand.

Claim.—In fertilizers consisting of greensand, marl, and animal matters, concentrating their fertilizing and stimulating properties by the previous separation of the useless matters of the marl and disintegration of the green sand, and the superaddition of ammonia, substantially as set forth.

No. 16,594.—JOSEPH C. KENT, of Cooper Iron Works, N. J.—*Process of Smelting Zinc Iron Ore.*—Patent dated February 10, 1857.—As soon as the furnace (charged, as usual, with iron ores containing oxyd of zinc, anthracite coal, and fluxing material) begins to show signs of cooling, the furnace commences to be charged with ordinary ores until the equilibrium of heat is restored and the furnace scoured, when the charging of zinc ores is resumed as before. The oxyd of zinc is received in the hot blast ovens and under the boilers, using one set of boilers and blast when charging the zinc ores, and another set when charging the ordinary ores; when using the latter, the zinc oxyd is cleaned from the boiler and oven, and collected in bags.

Claim.—The peculiar process of alternating in the blast furnace the Franklinite and other ores of iron and zinc with ordinary ores of iron, for the production of cast-iron and oxyd of zinc, by which process I maintain the equilibrium of heat, and keep the furnace in successful operation, as described.

No. 17,279.—JULIUS C. HURD, of Medway, Mass.—*Improved Process of Treating Raw Cotton.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The treatment of cotton by bleaching previous to picking or carding it, for the purpose of removing the motes and trash, as set forth.

No. 16,882.—LAWRENCE REID, of Barren Island, N. Y.—*Improvement in Processes for Preparing Fertilizers.*—Patent dated March 24, 1857.—The nature of this invention consists in making a combination of animal and earthy matters with saline ingredients in such proportion, and prepared in such manner, as will form a compound of salts of ammonia, super-phosphate of lime, sulphate, dried clay, and animal matters, producing this result by the treatment of animal or fish offal with sulphuric acid, water, bones, and clay.

The inventor says: In the patent of Robert Hare, the whole animal is treated, which requires so much acid as to render it too expensive for practice. I confine my action of acid to the liquid

portion obtained by boiling or steaming with water. I do not claim treating the soft parts of animals with concentrated mineral acids, and then adding bone dust as absorbents for manure, that having been already done in the patent of Dr. Hare. But what I *claim* consists in treating with acid only the liquid parts of the animal matter, after the same has been boiled or treated with high pressure steam, and then treating the same with bone dust and absorbents, in the manner set forth.

No. 16,362.—SAMUEL WETHERILL, of Bethlehem, Pa.—*Improvement in Processes for Reducing Zinc Ores*.—Patent dated January 6, 1857.—The mixed ore and coal is charged in each of the muffles *i*, and the doors *n* are closed so as to exclude atmospheric air. The heat from the fire-chamber *a*, in passing over and under the muffles *i*, decomposes the ore and vaporizes the metal, and the vapors thus given off pass over into the deoxydizing chamber *j*, and through the charge of incandescent coal on grate *q*, which takes up any oxygen; the vapors passing into channel *r*, where they are condensed to the metallic state, and run into condenser *t*.

The inventor says: Although I have described and represented a form of furnace in which to work my improved process, and which I have found to answer a good purpose, I do not wish to be understood as limiting my claim of invention to the working of the process in such a furnace, as other equivalent furnaces may be found to answer the purpose. I do not claim the said charcoal or carbonaceous matter for condensing in or upon it the said zinc vapor. I *claim*, in the process of obtaining metallic zinc directly from the ores of zinc, causing the metallic vapors of zinc, driven off from the ore, to pass through a charge of heated incandescent coal or other carbonaceous matter, substantially as and for the purpose specified.

No. 16,961.—SAMUEL BARKER, of New York, N. Y.—*Improvement in Processes for Treating Moss for Mattresses*.—Patent dated April 7, 1857.—The crude moss, having been cleaned by the usual machine from dirt and bark with which it is admixed, is submitted in a liquor prepared by dissolving fifty-six pounds of sulphate of iron in one hundred gallons of water. To this is then added sixty-five pounds of sulphate of soda, the whole being well mixed; in this the moss is kept from thirty-six to forty-eight hours, and when taken out it is washed in clear water, dried, and passed again through the cleaning machine, when it will be ready for use.

Claim.—The method of treating or preparing the moss of commerce to serve as a substitute for curled animal hair, substantially as set forth.

No. 17,011.—ALFRED MONNIER, of Camden, N. J., assignor to Himself and ISAAC GATTMANN, of Philadelphia, Pa.—*Improved Construction of a Retort*.—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The method described of preventing the rapid destruction of retorts by placing the same within a fire-clay casing *A*, and packing

the space intervening between the retort and said casing with any substance or mixture of substances incapable of combining, when heated, either with the clay or metal retorts B, as set forth.

No. 17,854.—JAMES R. FLOYD, of New York, N. Y., assignor to THEODORE C. KIBBE, of the same place.—*Improvement in Retort Covers*.—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing gas retort covers of malleable iron, in the manner and for the purposes set forth.

No. 18,172.—JOSEPH BOUR, of Forbach, France, assignor to CHARLES PARLANGE, of the parish of Point Coupez, La.—*Improvement in Saccharine Evaporators*.—Patent dated September 8, 1857.—The hollow vessels *a*, by their revolution, and also by means of cups *e* at their peripheries, carry up the liquid contained in the trough *A*; the cups *e* discharge the liquid over the heated surfaces of the revolving vessels, and by these means cause the aqueous parts of the liquid to evaporate. The steam to heat the apparatus is introduced at one end of the hollow shaft *d*, and escapes at the other end of the apparatus.

The inventor says: I am aware that it is not new to cause liquids to be evaporated by the movement of surfaces into and from them, when placed in open vessels, various forms of apparatus for that purpose having before been proposed and used. In some cases the surfaces have been hollow and heated by steam internally, and in others the liquid has been heated. I mention these matters in order to state that I do not claim to evaporate liquids by such means, unless the apparatus be constructed and combined according to my improvements described.

I claim the combination of a series of hollow vessels *a a*, such as described, with apparatus on the interior thereof for raising the water to, and passing it off by, the central axis; and the further combination of such like surface *a a* with vessels or apparatus *e e* for raising the liquid to be evaporated, and distributing the same over the exterior of the revolving surfaces, as described.

No. 18,830.—WILLIAM S. WORTHINGTON, of Newtown, N. Y.—*Improvement in Construction of Salt Pans*.—Patent dated December 8, 1857.—This invention has for its object the separation from the salt of what is termed the "bitterings," consisting of carbonate of lime and other impurities which are precipitated from the brine before crystallization commences. The claim and engraving will further show the nature of this invention.

Claim.—The employment, within a brine-evaporating pan, of a grating or perforated false bottom *C C*, substantially as and for the purpose specified.

No. 16,706.—JOHN M. ORDWAY, assignor to THE ROXBURY COLOR AND CHEMICAL MANUFACTORY, of Roxbury, Mass.—*Improvement in Preparing Alkaline Silicates*.—Patent dated February 24, 1857.—The composi-

tion consists of 100 parts of dry sulphate of soda, 94 parts of pure silicious sand, and 8 parts of fine charcoal or mineral coal.

Claim.—The manufacture of soluble silicates of soda or potash from the sulphates of soda or potash, by fluxing the same with silica and deoxygenizing agents, in the manner substantially as set forth.

No. 17,955.—HARMON HIBBARD, of Henrietta, N. Y.—*Improvement in Tawing and Coloring Skins and Furs.*—Patent dated August 4, 1857.—The skins are prepared and dressed in the usual manner; they are then spread out with the flesh side up; the flesh surface of the skin is then wetted with a fluid composed of one pound of soda dissolved in two quarts of warm water, with one ounce of sulphate of iron and four ounces of sulphuric acid. When the skins are saturated and nearly dry, they are treated with a mixture composed of equal parts of fish oil, alcohol, and spirits of turpentine. They are then placed in an iron kettle containing a fluid which, for a brown shade of the fur, is prepared of the following ingredients: Two gallons of hot water, one gallon of crude lixivium, one ounce of acetate of lead, one ounce of sulphate of iron, one ounce of prussiate of soda; the skins are agitated in this fluid and are then spread and dried.

Claim.—The process of compounding either of the above mentioned alkalies with the materials and in the manner as above described; and the process of applying those compounds, or either of them, to pelts, fur, wool, or hair, for tawing or coloring as described.

No. 16,750.—ISAAC RORABACK, of the parish of Caddo, La.—*Improved Soap Mixture.*—Patent dated March 3, 1857.—The mixture consists of five pounds opodeldoc soap, one-fourth pound sal soda, one table spoon of spirits of turpentine, one table spoon of spirits of wine, one table spoon of spirits of hartshorn, one and a half gallon of soft water.

Claim.—I claim the compounding of them in such proportions as to form a solid of suitable consistency, which I believe excels any other soap in its suitability for cleansing clothes of every description, and for toilet purposes generally, as well as in point of cheapness, convenience, and dispatch with which it is made.

No. 17,303.—LOUIS WILMAN, of Worcester, Mass.—*Improved Soap Substitute for Scouring Woollens.*—Patent dated May 12, 1857.—Thirty-six pounds of common soda ash, eighteen pounds of common salt, and ten pounds of wheat or rye bran, are boiled in one hundred and fifty gallons of soft rain water until rendered into a mucilaginous state. This compound is employed in the same manner as soap now is for scouring and fulling woollen goods.

The inventor says: I do not claim the exclusive use of bran in my composition, as this has been known.

But I *claim* the fulling and felting liquid composition composed of soda ash, salt, and bran, as described, for the purpose set forth.

No. 17,710.—WILLIAM WATT, of Belfast, Ireland.—*Improvement in Starch from Maize.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The manufacture of starch from maize or Indian corn, substantially as set forth, by steeping the whole or uncrushed corn in water heated to a temperature of from seventy to one hundred and forty degrees Fahrenheit's thermometer, such water being changed several times during the steeping, or applied in continuous or intermittent streams; and then grinding or levigating it with water heated to a temperature of from seventy to one hundred and forty degrees of Fahrenheit's thermometer; and then separating the starch as described.

No. 18,094.—EDWARD HERRING, of Walton-on-Thames, England.—*Improvement in Spirit Stills*—Patent dated September 1, 1857.—When commencing distillation, the mash pump is set in operation to force the mash through the various coils of the mash pipe W, in column B, until it begins to flow into the top chamber of column A. The top return cock of the mash return pipe Y is then partially opened, so as to allow a little mash to fall into A and gradually cover its various chambers. As soon as the mash has covered the bottom plate of A, the pipe Y must be entirely opened and the stop-cock to column A closed. Hot air is now forced in through pipe K, and steam through pipe L, which rapidly vaporize the mash; and the heated vapor passing up through the various chambers of column A by the hot vapor pipes H, issues from the top chamber into pipe XV, which conducts it to the bottom chamber of column B, through the various chambers of which it rises, heating the mash contained in pipes W. The mash is now allowed to descend into A, and flows in a continuous stream into the various chambers of column A, and passes downwards through pipes F. The inclination of the diaphragms keeps up a constant flowing action, which continually exposes new surfaces to the most searching action of hot air and steam, which deprive the mash rapidly of its alcohol. By the time the mash reaches the lowest chamber of column A, it is completely deprived of its alcohol, and is discharged through pipe b.

Claim.—1st. Giving to the diaphragms which separate the chambers an inclination or fall towards alternate sides of the still, as described, for the purpose specified.

2d. The introduction of hot air, substantially in the manner described, for the purpose of aiding in the evaporation of the mash, and keeping it in agitation, to prevent the clogging of the still.

No. 17,933.—PETER HOLBROOK, of Whitingham, Vt.—*Improvement in Sugar Boilers*.—Patent dated August 4, 1857.—The sap of the tree is collected in the sap pan A, and steam being admitted to the steam pan B, the sap is boiled; the stop-cock C serving to let off the condensed water, while the syrup is drawn from pan A and let into pan E, by means of cock D, the syrup passing through hole b into pan E.

Claim.—The steam pan B in combination with the sap pan A and the cover F to the syrup pan E, and the stop-cocks C and D to the steam pan B and sap pan A, or their equivalents, and arranged substantially in the manner and for the purpose set forth.

No. 18,215.—JOHN TURL, of New York, N. Y.—*Improvement in Drip Pots for Sugar Houses*.—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Constructing the pot of two metal parts or halves A A, formed, or “struck up,” in proper shape by any proper means, and connected together by rivets *a*, by brazing, or in any suitable way, substantially as described.

No. 17,409.—JOHN TURL, of New York, N. Y., assignor to SAMUEL TURL, of Brooklyn, N. Y.—*Improvement in Tips for Sugar Moulds*.—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the substitution of the wrought iron for cast iron in making the tips of sugar moulds.

But I *claim* the construction of the tip with a recess to receive the body of the mould, and with a conical mouth opening in a contrary direction to the regular conical form of the interior of the mould, when made in the manner substantially as set forth, and for the purpose described.

No. 17,021.—MERANO BUTTERFIELD, of Indianapolis, Ind.—*Improved Preparation of Sugar, called Table Manna*.—Patent dated April 14, 1857.—Half an ounce of the sulphate of alumina and potassa is dissolved in a quart of water, and brought to a brisk boiling; to this is then added eight pounds of white sugar, and said mixture is subjected to boiling; and when cooled and strained it will serve as a substitute for honey.

Claim.—The use of the sulphate of alumina and potassa, or its equivalent, in the manufacture from white sugar of a substitute for honey.

No. 18,030.—LEO DE LA PEYROUSE, of Paris, France, assignor to MICHAEL JEAN ADRIAN GUIET, of New York, N. Y.—*Improvement in Tanning Liquids*.—Patent dated August 18, 1857.—The skins after being properly prepared are placed for about twenty-four hours in a solution of tan which has been used before; to this is then added the required proportion of tan and chloride of tin, the quantity of the chloride of tin to be in proportion to that of the tan, which is to be augmented as the tanning progresses.

Claim.—Combining with the tanning solutions, or liquor, the chloride of tin or its equivalent, substantially in the manner and for the purposes set forth, in which the skins are handled as made known.

No. 18,203.—EBEN N. HORSFORD, of Cambridge, Mass.—*Improvement in Treating Cotton and Linen Waste*.—Patent dated September 15, 1857.—The stock is immersed and boiled in a diluted solution of hydrochloric acid, to dissolve the metallic particles adhering to it; it is then pressed and drained clear from the solution, and carefully washed, after which it is to be boiled in a solution of soap and caustic lye to remove the resinous matter adhering to it.

The inventor says: I do not claim the use of acid for the purpose of removing any of the mordants or native resinous or coloring matters from raw, textile, or fibrous materials.

But I *claim* the use of acid to dissolve metallic particles in cotton and linen factory waste, substantially as described.

No. 17,448. AUGUST F. W. PARTZ, of New York, N. Y.—*Improved Apparatus for Condensing Vapors and Gases, and for Evaporating Liquids*.—Patent dated June 2, 1857.—The vessel *a* being filled with the absorbing liquid to be evaporated, the disks *d* elevate and suspend by their revolution a film of the liquid which adheres to them, and present the same to the vapors or gases that are led into the vessel by means of pipe *e*, and which are caused by the covering hood to disseminate among the perforated disks; thus promoting the absorption or evaporation. The opening *F* is for the escape of vapors generated in the apparatus, or such portions of the introduced vapors as are not to be absorbed.

Claim.—In apparatus for facilitating the absorption of vapors and gases, &c., and the evaporation of liquids, the combination of the revolving perforated disks or sheets, with the vessel containing the liquid of absorption or evaporation into which they dip, and the hood or cover which guides the vapor and gases that are introduced through the unimmersed portions of said disks, substantially in the manner and for the purpose described.

No. 18,133.—LUDWIG BRUMLEN, of Hoboken, N. J.—*Improvement in Processes for Manufacturing Verdigris*.—Patent dated September 8, 1857.—A detailed description of this invention would take up too much space to be given here. The principal features thereof will be understood by reference to the claims.

Claim.—First. To use all these refuse liquids from chrome yellow and white lead to make verdigris of them.

Second. To use the remaining liquid from verdigris to make Paris green of.

Third. To use the remaining liquid from Paris green again for making chrome yellow.

Fourth. To use the refuse liquid from verdigris again for verdigris, in the manner described.

Fifth. I further claim the manufacture of verdigris, Paris green, and chrome yellow, from the different waste liquids specified, in the manner substantially as described.

V.—CALORIFICS.

No. 17,727.—EDWARD CONWAY, of Dayton, Ohio.—*Improved Alcohol Blow Pipe*.—Patent dated July 7, 1857.—The jet tube *F* passes into the furnace *N*, and up between the two wick tubes *g*, and jet tube *G* terminates near the wick tube *h*. By having the jet tube *F* discharge

its vapor between the two flames of the tubes *g*, great intensity of heat is secured. The wick tube *h* serves for soldering purposes.

Claim.—The use of the compound regulator *H I f* of the safety valve, in combination with the tubes *F G* and three-way cock *J* of the boiler, all arranged and operating as described and for the purposes set forth.

No. 18,693.—A. E. HITCHINGS, of New York, N. Y.—*Improvement in Boilers for Heating Buildings.*—Patent dated November 24, 1857.—This boiler is of cast iron, and presents a very large heating surface, surrounded or covered by a small body of water, yet with a sufficient quantity to prevent its being carried out by a rapid generation of steam. And by this arrangement the heating surface is exposed not only to the contact of the flame and heated products of combustion from the fire, but also to the radiated heat from the bed of the fuel, the narrowness of the inner chamber *D* allowing the rays of heat to strike not only its own broad, flat sides, but the inclined inner surface of the water jacket.

The inventor says: I do not claim, of itself, the conical water jacket, with fire in the centre.

But I *claim* the arrangement within the upright conical water jacket *A B* of the upright, flat-sided, central water chamber *D*, extending nearly across the said jacket in one direction, but made narrow in a transverse direction, substantially as and for the purpose set forth.

No. 18,465.—OSCAR F. MORRILL, of Boston, Mass.—*Improved Air and Vapor Burner.*—Patent dated October 20, 1857.—In the engravings *A* shows the stand for supporting the operative parts of the apparatus. Underneath this stand is a reservoir *B*, furnished with a hollow standard *C* extending above it vertically, and having a flat tube *D* projecting from the standard horizontally, and opening into a cylindrical air-chamber *E*, raised on the stand *A*. The upper part of this air-chamber is furnished with a wire gauze disk or disseminator, or cup *F*, around and above which there may be a perforated or wire gauze chimney or tube *G*. This improvement will be further understood by an examination of the engravings and claim.

Claim.—The inventor says: I do not claim an air and gas burner, consisting of a cylindrical tube having a wire gauze or perforated disk, or disseminator, and combined with a tube for supplying it with olefiant gas, and being open so as to allow common air to mix with the gas, and pass through the disseminator with the gas, and be burned therein.

Nor do I claim combining with an air and gas burner a perforated or wire gauze chimney or tube to extend around and above the same, as this latter has been patented by William F. Shaw.

Nor do I claim a hydro-carbon vapor burner as made of a combination of an ordinary gas burner, a reservoir to hold the liquid hydro-carbon, a wick tube, and a secondary burner or lamp to heat the wick tube, and vaporize the liquid of its wick, in order that the vapor may pass into the gas burner, and there be burned unmixed with air.

But I *claim* the combination of the air and vapor burner E F of the kind described, with the reservoir B, wick-holder C D, and a lamp or burner to operate against the wick-holder and vaporize the liquid of its wick, the whole being constructed so that such vapor may be discharged into the air-receiving chamber E, and be mixed with air therein, and with such air be caused to flow upward through the meshes of the disseminator F, so as to be burned thereon, substantially as specified.

No. 17,622.—HORATIO FAIRBANKS, of South Brookfield, Mass.—*Improvement in Vapor Burners*.—Patent dated June 23, 1857.—When this burner is in use, the secondary gas jet K is enflamed and receives vapor from the vapor chamber C; the heat of the flame of said gas jet, by operating against the inner surfaces of the recess D, causes the vapor to be generated freely from the fluid of the wick L. This vapor, as it issues from the main gas jet H, may be enflamed so as to give forth a brilliant light.

The inventor says: I do not claim a burner formed with a vapor reservoir and one or more secondary jets or jet pipes, for the purpose of vaporizing the liquid of the wick, so that the vapors so produced from said liquid may be burned as they may issue from a gas burner or jet pipe leading out of the upper part of the vapor chamber.

I *claim* my improved hydro-carbon vapor burner, as constructed with a secondary burner K, pipe H, recess D formed as described, and a closing slide M arranged to rotate on the body of the burner concentrically therewith, and constructed so as to be capable of either entirely or partially closing the recess D so that air may be excluded more or less from the same, and heat be confined therein, substantially in manner and for the purpose as specified, when the said recess is provided with a secondary jet or burner, to operate as explained.

No. 17,916.—D. H. CARPENTER, of Wallingford, Conn.—*Improvement in Vapor Burners*.—Patent dated August 4, 1857.—The burning fluid flows from a suitable reservoir through check-valve *a* into pipe *b*, the gas passing through jet *c*, and mingling with atmospheric air which passes through the holes *n* of tube U. The gas being ignited on the burner *d*, the flame heats the ring *e*, which communicates a high degree of heat to the tube *b*, thus promoting the evaporation of the fluid.

Claim.—The bent pipe or equivalent mingling reservoir, for mixing the atmospheric air and vapor, as described, and bringing the jet *c* on a level with the igniting orifice *d*, by which means the proper draft commingling and heat are attained, and the combination therewith of the check-valve *a*, which supplies and regulates the quantity of vapor necessary to produce the maximum effect for the purposes designed.

No. 17,640.—TIMOTHY ROSE, of Cortlandville, N. Y.—*Improvement in Candlesticks*.—Patent dated June 23, 1857.—By this arrangement the melted tallow from the burning candle will be collected around its lower end and finally be consumed, instead of running over the outside of the candlestick.

Claim, 1st. Making the socket B of the candlestick and the sliding

cup *a* within it of greater diameter than the candle intended to be used therein, for the purpose set forth.

2d. I claim the spur in the bottom of the cup combined with the stays *d*, on the inside of the top rims *E*, for the purpose of holding the candle in proper position, having space around it for the melted tallow to pass down into the cup, substantially as described.

No. 18,606.—JAMES SPRATT, of Cincinnati, Ohio.—*Improvement in Candlesticks*.—Patent dated November 10, 1857.—In this invention the customary flange or sconce *a* is made entire, extending over the whole top of the candlestick in the form of a shallow pan; *b* is a ferule of conical form, provided with an external screw which screws into a circular bead or ring *c*, rising from the sconce *a*. Channels *d* are formed in the bead, and corresponding radial grooves in the sconce, which, with the dished form of the sconce, cause any melted tallow to run into the centre when the candle has nearly burned out, whereby it is all consumed and the candlestick left clean.

Claim.—The method of securing a candle by the conical ferule *b*, adapted within, to be drawn over the candle and tightly clasp its butt, and screwed or otherwise attached to the sconce *a*, substantially as set forth.

No. 18,100.—IRA MAYHEW, of Albion, Michigan.—*Improvement in Chimney Caps*.—Patent dated September 1, 1857.—The effect of the wind upon the action of this cap will be to close the windward valves *D*, and at the same time to open the opposite leeward valves *D*, thereby insuring a free draught.

Claim.—The constant openings *A A A*, immediately beneath the drip of the roof *B B B*, in combination with the larger variable openings *C C C*, which are furnished with valves *D D D*, hung at points *F F F*, and separated by the connecting rods below, as shown, for the purpose specified.

No. 16,644.—MOSES H. HALE and SAMUEL HORTON, of Newburyport, Massachusetts.—*Improved Chimney Cowl*.—Patent dated February 17, 1857.—The inventors say: We do not claim the ventilator or chimney cap above referred to as patented by Emerson; but what we do claim as our invention is as follows, and although it is not new to make a chimney cap with passages extending around its mouth of discharge, and for the purpose of receiving currents of air and directing them up into or over the discharge flue, we have applied such in a particular way, and under a peculiar arrangement of parts which renders our ventilator new and advantageous in some respects.

We claim the improved cap, constructed substantially as described, viz: with a discharge pipe *A*, the inverted frustum *E*, the outer frustum *B*, its wind passages *G G*, and the shield or fender *C*, arranged together essentially as specified.

No. 17,077.—AUGUSTINE CAMPBELL, of Philadelphia, Pa.—*Improvement in Chimney Dampers*.—Patent dated April 21, 1857.—The valves *d* are pivoted to a frame *A*, and are hinged to the angular frame

B D B¹ D¹, and they can be opened or closed by raising or lowering the latter frame by means of rod I and lever G.

Claim.—The angular frame provided with a series of valves or vanes *d d*, arranged, constructed, and operated substantially in the manner set forth and for the purpose specified.

No. 18,501.—JOHN R. DEIHM and JASPER SNELL, of Pottsville, Pa.—*Improvement in Machines for Breaking Coal.*—Patent dated October 27, 1857.—In the operation of this improved machine the coal is passed through the space F² and falls immediately on the grate bars C, the under sides of which are V-shaped, the spaces between them being equal to the spaces between their ends and the periphery of segments *a* on shaft D. As the coal falls on the grate the knives, as they revolve, meet it on a line above the shaft, and are so arranged that but one of them strikes the coal at the same time. The coal, as it lies across the spaces between the bars C; is broken, falls through on the screen, and is carried off and separated from the dirt.

The inventor says: We *claim* the inclined curved grate bars C, constructed as described, in combination with knives or dividers E, on segments *a*, placed spirally on shaft D, operating as described, and for the purposes set forth.

No. 17,294.—TOWNSEND POORE, of Carbondale, Pa.—*Improved Coal Cracker.*—Patent dated May 12, 1857.—The coal is thrown in at each end between the rocking crusher C and the gratings I; and a rocking motion being imparted to crusher C, on its trunnions B, by power applied to cross-head F, the coal receives its first breaking on the grating I, and the broken coal is driven through the spaces *i* and *a*; the remainder drops down between the crusher C and the swinging gratings J, which are made to vibrate on their trunnions *m* by means of connecting rods L, which alternately bring up one of the hinged portions J with a blow, thus causing a second breaking of the coal.

Claim.—The combination of the rocking cracker with the fixed and swinging gratings, substantially in the manner and for the purposes set forth.

No. 18,380.—EUGENE BORDA and DAVID GLOVER, of Woodside, Pa.—*Improved Machine for separating Slate and other foreign substances from Coal.*—Patent dated October 13, 1857.—In this invention a suitable frame work F sustains a cylindrical screen S. This screen is composed of two heads H, (which may be either opened or closed,) fixed upon a shaft working in boxes upon the frame; these heads are connected by longitudinal bars arranged parallel to the axis of rotation of the cylinder at equal distances from each other to suit the size of the coal. An inclined chute A conveys the coal, &c., from the screen. An inclined chute C is placed under the screen, commencing at the forward part of the cylinder and extending to the rear of the machine. Another chute extends forward from the front of the cylinder. All the chutes are covered with sheet iron.

The inventor says: I *claim* separating coal from slate by the apparatus above described, or in any equivalent manner, when the mass to be separated is conveyed by an inclined plane to the outside of a hori-

zontal revolving cylinder, composed of bars parallel to its axis of revolution, substantially as specified.

No. 18,082.—WILLIAM D. BROWN, of Weymouth, Mass.—*Improvement in Coal Sifters*.—Patent dated September 1, 1857.—The coal being thrown upon the sift I, and the cover being closed, the cam lever Q is turned, and slide P will be disengaged from catch s, and the hod C can be rocked on its fulcrum B, the ashes and dust falling upon plate L and into chamber N, the plate L retaining the ashes when the coal on the screen I is to be discharged.

Claim.—The combination of the screen J J, and the plates K and L, placed in a vessel or machine, to be used as a portable coal hod and sifter, so suspended on an axis as to allow of an oscillating or swinging movement, all arranged and operating as in the specification described.

No. 18,125.—SANFORD ADAMS, of Boston, Mass.—*Improvement in Coal Sifters*.—Patent dated September 8, 1857.—Coal ashes or other substances being introduced into the cylinder B through the cover opening, and a reciprocating rotary motion being given to sieve A, by means of handle G and spindle C, the ashes fall through the meshes of the sieve into barrel E.

Claim.—Attaching the sieve to the bottom of the rotating spindle, and the spindle to the cover of a barrel, in the manner and for the purpose as above specified.

No. 18,430.—SAMUEL BOOTH, of New York, N. Y.—*Improvement in Coal Sifters*.—Patent dated October 20, 1857.—In operating with this improved sifter, the ashes are thrown into a hopper from a coal hod, being sent in a continuous stream; sliding directly down the chute-board e, it forces i open, and is projected with considerable force squarely upon the screen c, near its top. A considerable portion of the ashes passes through at once, leaving the cinders free to roll down and fall into the receptacle b, the remaining ashes being screened out before they arrive at the bottom and fall into a. The jarring produced by the rolling down of irregular shaped cinders assists the operation, the screening thus being a self-operating performance.

The inventor says: I do not claim the different parts composing my improved apparatus, when separately considered.

But I *claim*, in my improved coal ash-sifter, the specific arrangement described, consisting of the inclined screen in such combination with the chute-board, which is also inclined, that the impact of the stream of ashes and cinders shall be perpendicular, or nearly so, to the surface of said screen; and this I claim when said arrangement is encased within a tight box having a flap or door to close automatically so soon as the ashes have been poured in, by which construction the separation of the cinders is effected by the mere operation of pouring, and by which, also, the dust incident to said operation is prevented from escaping, as set forth.

No. 18,687.—JACOB GLASS, of Treverton, Pa., assignor to Himself and GEORGE MOWTON, of Treverton, Pa.—*Improvement in Machines for*

Slating Coal.—Patent dated November 24, 1857. The nature of this invention consists in the employment, in the process of slating coal, of an inclined cylinder B; said cylinder is constructed with the following peculiar features for united use, to wit: Checkered circumferentially near the centre of its length with small square openings, furnished with narrow oblong slats *a b* from its receiving end to the checkering, and with similar but wider slats from the discharge end to the checkering, and each or every other one of its slats furnished with a bevelled or V-shaped rib internally, which only extends from the checkering to the ends of the cylinder B.

Claim.—The inventor says: I am aware that a cylinder formed of bars placed further apart at one end than the other, so as to provide oblong slots of different widths, has been used for cleaning grain, also that a cylinder of this construction has been furnished with an intermediate perforated section, therefore I do not claim this.

But I claim the employment, in the process of slating coal, of the revolving inclined cylinder when constructed with the several peculiar features for united use, to wit: checkered circumferentially near the centre of its length with small square openings furnished with narrow oblong slots from its receiving end to the checkering, and with similar but wider slots from the discharge end to the checkering end, each or every other one of its slats furnished with a bevelled or V-shaped rib internally, which only extends from the checkering to the ends of the cylinder, as and for the purposes set forth.

No. 17,018.—JOHN F. BURGIN, of Northumberland, Pa.—*Improved Cooler for Wine, Beer, and other Liquids in Barrels.*—Patent dated April 14, 1857.—The receiver B is filled with ice through the opening *a*; and as the cylinders *c* and *d* are eccentric, in respect to each other, the pieces of ice, as they become smaller in size and in quantity, by melting, are made to hug the cylinder *d* as they descend, and thus a very uniform refrigeration of the articles contained in barrel D is obtained.

The inventor says: I do not claim broadly the placing of one refrigerating vessel within another.

But I claim arranging the two cylinders *c d* eccentrically in respect to each other, when the widest portion of chamber B is directly below the opening *a*, as set forth.

No. 18,885.—JOHN O'BRIEN, of New York, N. Y., assignor to OWEN COLLINS and JOHN DUNLEY, of New York, N. Y.—*Improvement in Grate Dampers.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The employment within a fire-place of a damper B, composed of two frames *a* and *d*, when one of said frames *d* is hinged to the other frame *a*, as and for the purposes specified.

No. 16,905.—JOHN BOOTH, of Pawtucket, R. I.—*Improvement in Steam Drying Cylinders.*—Patent dated March 31, 1857.—The drying cylinder A is supplied with steam by means of the pipes *k* and *j*. The pipe *j* passes through a siphon pipe *c d e*, which passes through a stuffing box so as to fit the cylinder A steam tight; as soon as the

condensed water in the cylinder A rises above the lower edge of the pipe c, it is forced out of said pipe and the pipes d h i by the pressure of the steam in the cylinder A.

Claim.—The arrangement of the steam and water pipes at one end of a drying cylinder, in the manner and for the purpose substantially as described.

No. 16,329.—JOHN G. ERNST, of Harrisburg, Pa.—*Fire Hook.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The hook E constructed of the two parts b c, and attached to the beam A, which is provided with rounds a, and mounted upon wheels, substantially as described for the purpose set forth.

No. 16,768.—FOUNTAIN E. PITTS, of Nashville, Tenn.—*Improvement in Back Plates for Fireplaces and Grates.*—Patent dated March 3, 1857.—This grate, to be placed in the throat of a chimney, consists of a series of angular ridges and furrows with a slot in the bottom of each furrow. This form of the bars secures a very effectual interception of the heat at the entrance of the chimney.

The inventor says: I am aware that grated, reticulated, and perforated plates (the last being described in the patent granted to Jacob Cohen, April 15, 1850) have heretofore been used in the throats of fireplaces or flues of stoves; also that a fire-back composed of metallic plates arranged like the slats of a window blind, is described in the patent for a cooking stove granted to G. Smith and H. Brown, May 15, 1847. I claim none of these. I am also aware that it has been proposed to place a grate with angular bars similar to mine in the flues of cooking ranges. I do not claim the plates so placed.

I claim the back plate for fireplaces and grates, constructed with the series of angular ridges, furrows, and slots, in the manner and for the purposes described.

No. 18,920.—EUGENE MIANNAY, of New York, N. Y.—*Improvement in Artificial Fuel.*—Patent dated December 22, 1857.—This invention is called "the ligno-bituminous coal," and is composed of tar issuing from the distillation of coal in gas manufactories, &c., and also of dry tar; of dust of charcoal and wood of all sorts; of dust of coke proceeding from gas manufactories; and of dust of ordinary coal. The said artificial coal serving for the same purposes as coal and charcoal.

Claim.—The composition of a new coal or artificial fuel, by the said several ingredients mixed together in different proportions, called ligno-bituminous coal, and manufactured as described, for the intended given purpose.

No. 18,729.—ELIZABETH BELLINGER, of Mohawk, N. Y.—*Improvement in Composition Fuel.*—Patent dated December 1, 1857.—To make this composition, the operator takes kawri gum, rosin, and alcohol in the following proportions: kawri gum, one part; rosin, five parts; and alcohol, one part.

The whole is placed in a vessel together and subjected to a gentle

heat until well dissolved and mixed, when sawdust enough is added and stirred up and well mixed until the whole forms a paste of as great a degree of consistency as can be conveniently moulded by pressure into cakes, blocks, or lumps of convenient size, which are left to dry in the atmosphere, after which they are ready for use.

The inventor says: I do not confine myself to the precise proportions of the several ingredients specified.

But I *claim* the inflammable composition formed by the union of kawri gum, rosin, and sawdust, in suitable proportions to give it the character specified.

No. 18,432.—JOHN CASE and ISAAC SOULES, of Amsterdam, N. Y.—*Improvement in Furnaces*.—Patent dated October 20, 1857.—The chief object of this invention is to economize fuel in the generation of steam; to diminish the quantity of smoke, and thereby lessen its capacity to carry off heat when it escapes; and incidentally to extinguish the sparks and prevent their escape.

The boiler consists of a cylindrical shell A and flue B, connected at one end with a fire-chamber C, and at the other with a smoke-box D. The flue forms a communication between the fire-chamber and smoke-box, through which the gaseous products of combustion pass with the sparks from the furnace to the smoke-box. An orifice J, fitted with a valve by which it can be opened and closed at pleasure, enters the upper part of the smoke-box, with sufficient space around the fan case for the gases to enter freely. A pipe G on the outside of the boiler forms a communication between the smoke-box and the furnace through the fan case.

The fan F, made like the ordinary fan blower, is placed on one side of the smoke-box, with sufficient space around it for the gases to enter freely.

The inventors say: We *claim* the combination and arrangement of the fire and smoke boxes, direct and return flues, the valved atmospheric air orifice, an aperture for the escape of the spent gases, and the fan for maintaining the circulation of the air and gases, arranged substantially as declared.

No. 18,491.—THOMAS ALDRIDGE and JOHN ALDRIDGE, of Hudson, N. Y.—*Improvement in Furnaces*.—Patent dated October 27, 1857.—The nature and object of this invention consists in the application and use of mechanism, by which the smoke and gases that generally pass off through the chimney and are lost are withdrawn from the chimney, mixed with heated atmospheric air to promote their entire combustion, and then carried to and under the fire and consumed, thereby economizing fuel and obtaining an increased quantity of heat therefrom, and also in rendering the entire apparatus self-regulating or automatic.

In the engraving, A is an ordinary cylinder boiler set in the foundation B, the chimney C being, in this case, represented a little at one side of the rear end of the boiler; D is the furnace door, and E the door to the ash-pit underneath the fire. To the chimney, about where the smoke enters it, is attached a tube or smoke conductor F, the other

end of which enters the ash-pit. To this conductor is attached a blower G; H is the mouth of the atmospheric air tube, and its position and its entrance into the smoke conductor F is shown by dotted lines *h h*.

The inventors say: We do not claim, generally, either the construction of smoke-consuming furnaces, as they are called, or returning the smoke, gases, &c., of the fire back to, or under, the fire or furnace, many differently arranged plans having been devised and used for such purpose.

Nor do we claim the mingling of atmospheric air with the products of combustion, as this has been effected, to a greater or less degree, by many inventions.

But we claim the combination and arrangement of the smoke and gas conductor F, the atmospheric air tube H, and the blower G, arranged and located substantially as and upon the principles declared, and for the uses and purposes set forth and described.

We also *claim* the connexion with such arrangement of the smoke conductor F and air tube H, regulating the velocity of the blower G, by and according to the pressure of the steam in the boiler, through the intervention of the conical pulleys, or their equivalent, substantially as and for the purposes set forth and described.

No. 18,951.—BENJAMIN F. BLOOD, of Port Jackson, N. Y.—*Improvement in Furnaces*.—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the returning of smoke to a fire, either with or without oxydation, whether under the grate or into the flames, whether through the boiler or outside of the boiler, all of which processes are old and unpatentable.

Neither do I claim placing a fan blower either within or without the smoke-box, smoke-stack, or any chimney flue, for the above purposes, or any of them.

First. I *claim* a scuttle G, in combination with the flues of the boiler, as heretofore described, as a protection, a guide, and a re-heater for the gases passing through the flues, substantially as set forth for the purpose specified, whether the said scuttle be made plain or indented, and whether it pass directly downward to the grate, or traverse some other portion of the inside surface of the fire-box.

Second. I am aware that David Matthew obtained a patent, May 15, 1855, for a pipe of less diameter than the inside of the base of the smoke-stack, set up in the same and extending downward to the vicinity of the bottom of the smoke-box, having the exhaust pipes beneath it, and an annular space between it and the base of the stack, the whole designed to draw the smoke from the top of the smoke-box into the annular space, and thence up the stack, and also to draw the sparks from the bottom of the smoke-box, lest they do injury thereto.

I do not claim such an arrangement, nor one that will effect the purpose for which he claims it.

I claim a downward bifurcated continuation of the smoke-stack, without any egress from the smoke box between this continuation and the base of the stack, and extending downward as far as may be without disturbing those heavier sparks which may have fallen to the

bottom of the smoke-box, into which bifurcations the exhaust pipes turn upward, the whole being designed by closing egress for the smoke at the top, to give the sparks an opportunity to settle in the smoke-box, or be returned to the fire through the nozzle H; also to restrain the hot air and gas from immediately leaving the smoke-box at the top, at the same time that the legs K will select the matter of their draught from the cooler and lower, instead of the lighter and hotter gases of the top of the smoke-box.

No. 16,348.—JOSEPH D. GREENE and EDWARD IVERS, assignors to JOSEPH D. GREENE, Philadelphia, Pa.—*Improvement in Air-Heating Furnaces*.—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We are aware that a single inverted hollow cone has been used in an auxiliary smoke-receiving drum, standing by the side of a furnace cylinder and upon the same ash-pit, for the purpose of conducting cold air into the top of said drum, to mingle with the smoke therein, and find its way in part through the bottom of said drum and the ash-pit to the furnace chamber, and the remainder pass off with the smoke and gaseous products of combustion, as represented in Wm. Ennis' patent of March 29, 1853, and therefore we do not claim to be the first to use a hollow cone in a hot-air furnace.

We *claim* the peculiar arrangement of the double series of smoke-conducting and air-heating tubes, with the other parts of our air-heating apparatus, viz: the series of smoke-conducting tubes being arranged around the exterior surface of the furnace chamber, with their induction smallest ends uppermost, and the series of air-heating tubes being arranged around the interior surface of the furnace chamber, with their induction smallest ends opening downwards, and both ends open to the atmosphere, all substantially as set forth.

No. 17,842.—GEORGE M. LONGACRE, of New Orleans, La.—*Improvement in Bagasse Furnaces*.—Patent dated July 21, 1857.—The furnace chamber A being supposed to be in full operation, the valve *g*, in ventilator F, will be closed, and the damper *v*, under boiler B, will be open. Meantime the chamber *a* having been charged with moist bagasse, damper *v*¹ will be closed, and the draught openings of this chamber also shut off. Valve *g*¹ will be open and will carry off the evaporated moisture of the bagasse, and by this drying bring it to a condition favorable to combustion; so that when the contents of chamber *a* have been consumed, damper *v*¹ will be opened, valve *g*¹ closed, and the draught openings of the furnace opened, while the chamber *a* will receive a fresh supply of bagasse which will be dried as described for chamber *a*¹.

Claim.—The construction of bagasse furnaces with a space *c* around and communicating with the upper portion of the fuel chamber, substantially as described and for the purpose set forth.

No. 18,874.—MOSES THOMPSON, of New York, N. Y.—*Improvement in Bagasse Furnaces*.—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, as my improvement in furnaces for burning bagasse and other fuels too wet to be conveniently burned in the usual and well known ways, first, the combination of two chambers, the one above the other, and separated by a grate, the lower one for the combustion of any known dry carbonaceous fuel, and the upper one in immediate proximity therewith to receive heat therefrom for heating and drying the charge of wet fuel, with a mixing chamber into which both continuously and simultaneously discharge their gases before reaching the thing to be heated, for mingling and mutual combustion.

I also claim, in combination with said fire chamber and wet fuel chamber, or drying chamber, making the grate upon which the wet charge rests, sufficiently open to allow the lower portion of the wet charge, as it becomes dry and charred, to fall through into the fire chamber, and keep a hot fire therein, supplying the place of other dry fuel, while the uncharred portion of the wet fuel is properly supported by the grate till dried as described.

I also claim placing the mixing chamber of combustion in substantially the same position described relatively to the fire and the wet charge, so that the products of combustion from the dry fuel may pass along the lower part of the wet charge, drying and charring it on their way to the mixing chamber, and reach it without being in any considerable degree obstructed or cooled by the wet charge, as shown.

I wish it distinctly understood that I make no claim to any of the parts or combinations specified, except in their application to the preparation and combustion of wet fuels.

No. 17,039.—JAMES HENNINGTON, of Richmond, Ind.—*Improvement in Apparatus for Feeding Fuel to Furnaces*.—Patent dated April 14, 1857.—The trunk G is supplied with sawdust through the aperture *j*, and the scrapers *i* attached to endless apron H, move the sawdust through passage *b* into box A, whence the revolving feeders *e* feed it into the furnace. The blades of these feeders are made to yield to some extent, in case of their meeting chips or others coarser articles.

The inventor says: I do not confine myself to the employment of a trunk H containing a series of moving blades or scrapers *i i*, to supply the box A, as any other suitable means of keeping it properly supplied may be used.

Nor do I confine myself to the use of any particular number of feeders *e e* upon each shaft.

But I *claim* attaching the feeders *e e* to their shafts by joints *f f*, and applying springs *g g* thereto, substantially as and for the purpose set forth.

No. 18,010.—EDWARD DUGDALE, of Burlington, N. J.—*Improvement in Grate Bars of Furnaces*.—Patent dated August 18, 1857.—By operating the arm F of the lever E, the flexible grate bars B can be thrown into various positions; and when such a movement is produced, the position of most every piece of coal is changed, thereby preventing said coal from baking, while the ashes and cinder are removed by said movement.

The inventor says: I am aware that turning or swinging grates have been used in stoves for the purpose of clearing the grates, but these work very imperfectly, chiefly when applied on a larger scale, besides having the inconvenience that coal will always be wedged in between the bearings and the rim of said grates, which prevents them from being closed again.

I do not confine myself to the use of chains, as any flexible metal combination, such as metal rope or linked rods, may be used with the same advantage.

Nor do I confine the application of my invention to locomotive furnaces only, as it may be applied with equal success to the furnace of any steam boiler, or any furnace in general.

I am aware that shaking and hinged grates have been used, and that a fire-box has been made to raise and lower, so as to change its position in relation to the boiler.

I am also aware that endless chains have been used for conveying coal into a furnace or fire-box; I do not claim any of these things.

But I *claim* the flexible grate bars described, when used in connexion with a raising and lowering or shaking apparatus, so as to change the position of the fire, prevent the baking of the coal, and sift out the ashes, cinders, &c., as set forth.

No. 17,022.—JOHN H. CAHILL, of Philadelphia, Pa.—*Improvement in Hot-Air Furnaces*.—Patent dated April 14, 1857.—The operation of this furnace is as follows: A fire being started in the cylinder A, the smoke and gas pass directly upward through the main flue L; and when the fuel is completely ignited, the damper K is closed, when the hot products of combustion pass through flues E down into the bottom radiator C; thence upward, through vertical flues D and horizontal radial flues m, to the centre of the upper radiator B, above the damper K; and thence directly upward, through main flue L, to the chimney.

The inventor says: I do not claim, generally, making a hot-air furnace surrounded with radiating flues, combined with a central chamber having a damper, by causing direct and indirect draught through the furnace, as such arrangements are common and well known.

I *claim* the clean-out holes I, in the lower radiator C, in combination with the short stopper tubes fitting adjustably within the same, and opening through the lower plate of the said radiator, substantially and for the purposes described.

No. 18,002.—DANIEL P. WEEKS, of Boston, Mass., assignor to Himself and EBEN SEAVEY, of Charlestown, Mass.—*Improvements in Hot-Air Furnaces*.—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the invention of a tapering discharge pipe, nor arranging a series of such around the fire-pot, and so as to open at their bases into the same.

Nor do I claim combining and arranging with a fire-pot and such a series of pipes a conical or tapering radiator closed at its top, and placed within the series and directly over the fire, and so as to receive

the volatile products of combustion from the fuel, and deflect them outwardly towards and into the mouths of the several discharge pipes.

Nor do I claim an annular radiator; nor do I claim conical or frustro-conical bases, or semi-cones combined with the fire-pot, and its series of tapering discharge pipes, and serving to support and open into said pipes, respectively; as I am aware that much if not all of such is used in the furnace of Gardner Chilson, and claimed by him in his patent dated September 26, 1854.

But I *claim* the combination and arrangement of the parachute radiator A, air chamber B, and pipes F F, with the fire chamber C, and the reverberating chamber D, having smoke passages or pipes E applied to the same, and leading into the radiator A, as described.

I also claim the manner of constructing the radiator A, viz: with a tapering tunnel *i*, an annular deflecting dome *f*, and a discharge passage or pipe *d*, arranged together, substantially as specified.

I also claim constructing the air chamber B, with a bulb or projection part *k*, when such chamber is arranged within a reverberating chamber D, made to communicate with the discharge pipes E E, and a chamber of combustion, and to surround the radiator A, opening at its lower end into the said chamber of combustion, essentially as set forth.

No. 18,054.—WILLIAM MOULTRIE, of New York, N. Y.—*Improvement in Water Vessels for imparting humidity to hot air, and vapor draught to the grate-bars of Hot-Air Furnaces*.—Patent dated August 25, 1857.—The water in the vessel M becomes heated by its vicinage to the ash-pit F, of fire-box C, and the steam generated thereby passes through the grate for the better support of the combustion as the passage O is opened. By closing the passage O, and opening passage P, the steam of the water vessel M passes into the furnace chamber for communicating moisture to said chamber.

The inventor says: I do not claim the placing of a water vessel within a furnace chamber simply for the purpose of imparting humidity to the air therein.

Nor do I claim to have discovered the utility of vapor draught for the support of combustion.

But I *claim* the structure, location, and application of the water vessel M, whereby either or both of said objects are attained, substantially as described, in connexion with furnaces and other heating apparatus.

No. 17,791.—ISAAC G. JOHNSON, of Spuyten Duyvel, N. Y.—*Improvement in the use of Coal Tar in Iron Furnaces*.—Patent dated July 14, 1857.—A coal fire having been ignited on the grate, a quantity of coal tar is poured into the inclined pan *c*; and as said coal tar is ignited the flame passes into the furnace through the passage *b*, and the products of combustion pass directly over the burning coal together with a proper portion of atmospheric air to make a perfect combustion.

Claim.—The employment of coal tar in the air furnace, substantially in the manner and for the purposes set forth.

No. 17,132.—CHARLES H. JOHNSON, of Boston, Mass., assignor to Himself and JOSEPH G. HAMBLIN, of the same place.—*Improvement in Argand Burners*—Patent dated April 21, 1857.—The glass chimney and globe of this lamp rest upon the brackets E of the cylinder C, and by turning said globe, the brackets E, together with cylinder C; will be turned, and the register openings *d* will admit more or less air through the openings *c* of the burner *a*.

The inventor says: I do not claim applying an air regulator or series of valves to the orifices for admitting air into the inner tube of an argand burner.

Nor do I claim, separately therefrom, supporting the globe and chimney brackets by a tube encompassing the burner or outside tube thereof.

But I *claim* the improvement of constructing the supporting tubes of the brackets, so that it may not only sustain such brackets, or have them extended from it, as described, but at the same time admit the register to be operated by simply laying hold of and turning either the globe or chimney, when the friction thereof on the brackets may be sufficient for the purpose.

No. 17,035.—E. P. GLEASON, of Providence, R. I.—*Improvement in Gas-Burners*.—Patent dated April 14, 1857.—The gas passes from the lower chamber D, through the two apertures *e*, into the tube I; and as the two jets meet, they produce a self-regulating effect on each other, which operates to check the flow of the gas at a high pressure; the gas escapes through the four apertures *i* and passes into burner G.

The inventor says: I am aware that a combination of a central conducting pipe, with a capping pipe, has been patented by Brick; I therefore disclaim said device, irrespective of a combination with the peculiar self-regulating check.

I *claim* the peculiar arrangement of the holes *e e*, in combination with the connecting tube I and the perforations *i i i i*, for the purpose specified.

No. 17,530.—JOHN C. WALSH, of Lockport, N. Y.—*Improvement in Gas-Burners*.—Patent dated June 9, 1857.—The gas enters the burner through pipe *h*, passes up pillar *g*, through passages *k*, then up pillar *d*, through passages *k*, into chamber *a*, and finally escapes through burner B.

The inventor says: I am aware many devices have been used for the purpose of retarding the flow of gas through a burner, such as deflectors or circuitous passages. I lay no claim to these things.

But I do *claim* the arrangement within the burner of two or more hollow pillars *d* and *g* extending up into the chambers of the burner, with holes K made obliquely into the upper end of said pillars, as represented, for producing counter currents of gas as it flows through the burner to break its force and regulate the supply of gas to the tip of the burner, for the purposes mentioned.

No. 17,674.—ASA D. GATES, of Binghamton, N. Y.—*Improvement in Gas-Burners*.—Patent dated June 30, 1857.—By placing the tube

C on a common gas-burner E, the gas is impregnated to a certain degree with atmospheric air; and when the gas is ignited, the intensity of the light is augmented without additional burning of the gas.

Claim—Attaching to the top of, or slipping over the usual burner the conical or cylindrical supplemental chamber burner, as and for the purposes set forth.

No. 18,230.—WILLIAM W. BATCHELDER, of New York, N. Y.—*Improvement in Gas-Burners*.—Patent dated September 22, 1857.—The principal of this improvement consists in causing the gas to issue in succession from two apertures of different areas, placed near together, and so shaped that the gas shall be made to pass in a thin stratum from the first or lesser aperture to the next, or greater, in such a manner that the stream shall not be deviated in passing from one to and through the other.

In the drawings, at *a* is the first gas jet, of common construction, screwed upon the pipe as usual. This terminates into a fine slit *a*¹ at the top, which is the first of the two apertures in the improvement. Over this slit is placed a cover *b*, the interior of which is so large as to leave a clear space all around. This has a rounded top across, wherein is also cut a narrow slit *b*¹, but forming an opening several times the area of the inner slit *a*¹. Near the base of this the cap is pierced with several small holes *c*, and finally it is secured in place upon *a* by an adjusting screw or screws *d*.

The inventor says: I *claim* the improved method of burning gas described, viz: combining two apertures of different areas, so arranged that a flat stratum of gas issuing in the first instance from the lesser aperture shall impinge and press upon the second and larger aperture placed in the same plane with the issuing jet, and in such manner as to pass it without causing any deviation thereof.

No. 18,289.—WILLIAM H. LINDSAY, of Brooklyn, N. Y.—*Improvement in Gas-Burners*.—Patent dated September 29, 1857.—The nature of this invention consists in the use of certain deflectors with a fish-tail, or other burner of suitable construction, for producing a more perfect combustion of the gas with an increased light.

The angle pieces or deflectors C D, rising above and almost immediately over the orifices or slit in the burner B, are adjusted in the socket or ring E, by means of set screws, at or about right angles with the line of the flame from the burner, between which and the sockets of the burner their lower ends are inserted; or a slight steel spring attached to their lower ends, and pressing against the burner socket or the ring, answers the same purpose; by these means they can be adjusted so that the flame may be increased in breadth, which decreases the height, or *vice versa*, by bringing their ends over the burner closer and further apart.

The inventor says: I do not confine myself to the particular or precise form or arrangement of the several parts as described and shown, as the same may be modified in various ways, which I claim doing whilst producing results substantially the same.

I *claim* the application to a gas-burner or burners of angular pieces

or deflectors, or the equivalent thereof, substantially as described, for the purpose of increasing the light derived from one or more streams of gas issuing or escaping from a gas-burner or burners of any suitable construction, by altering and directing the current or currents of gas, and the form of flame.

No. 16,848.—JOHN MCHENRY, of Cincinnati, Ohio.—*Improvement in the Construction of Gas-Burners*.—Patent dated March 17, 1857.—A is a case or shell which is made cylindrical, or slightly conical, somewhat larger than the pipe, ordinarily about three-quarters of an inch in diameter, and about one and a half inch long; the lower end of this shell has a reducing neck *i* for connecting it with the pipe, its upper end is fitted with a tip *h* forming any variety of burner; within the shell and occupying its entire cavity, except a small space *c* and *d*, at either end, is a plug *b* having a channel or groove of about one-eighth of an inch diameter, spirally around its periphery, and which forms the only communication between the spaces *c* and *d*; therefore the gas, in its passage from the pipe to the burner, is caused to pass the entire length of the spiral channel, about fifteen inches, in contact with the heated surfaces of the shell and plug, whereby it becomes sufficiently attenuated to effect a thorough and perfect combustion of the carbon.

Claim.—The removeable disk *e*, as a means of varying the size of the throat of the burner, as and for the purposes set forth.

No. 16,820.—CHARLES H. JOHNSON, assignor to Himself and JAMES G. HAMBLIN, of Boston, Mass.—*Improved Device by which the Spigot of Gas Cocks may be Lubricated in their Seats*.—Patent dated March 10, 1857.

The inventor says: I do not confine my invention to making the stud *n* in the precise form and manner above set forth, as it may be otherwise constructed, so as to move into or out of the opening *o*.

I *claim*, when the tapering plug of the faucet or stop-cock is drawn into the tubular seat by the action of the spring *f*, as specified, combining with the seat tube *a*, an entrance passage *k* and groove *l*, and a moveable stop *n*, arranged substantially in the manner and for the purpose as specified; or, in other words, so as to enable a person to expeditiously lubricate the stop-cock, without the necessity of entirely removing its plug from its seat tube.

No. 17,251.—R. SNOWDEN ANDREWS, of Baltimore, Md.—*Improved Apparatus for Heating and Cooking by Gas*.—Patent dated May 12, 1857.—The apparatus rests on the gas-burner *E*; the gas escapes through *E* into the cylinder *b*, and the atmospheric air enters through the apertures *c* of the bottom *p*; the mixed gas and air passes out through the apertures *b*, and, upon being ignited, the flame is made to play upwards and around the sides of the boiler, which rests on disk *f*. A current of air passes through the pipes *h*, which becomes heated as it passes through said pipes, and, escaping through the holes *p* of disk *f*, tends to impart great intensity to the fire, upon the principles of oxydation and hot draughts.

The inventor says: I do not claim the tubes *h h* and the hot-air chamber *g*, except as combined with my peculiar apparatus.

I *claim* the described article of manufacture, consisting of its tubes *h*, hot-air chamber *g*, perforated rim *d*, and spreading flange *C C*, constructing and operating as set forth.

No. 18,945.—SAMUEL GARDINER, Jr., of New York, N. Y.—*Mode of Lighting Gas by Electricity*.—Patent dated December 22, 1857.—This invention consists in placing a fine coil of platinum wire *l* over the burner *a*, which is made red-hot by the passage, and the gas impinging on it becomes ignited. *F* is the electro-magnet for operating the cock *C*, to turn off and on, and regulate the flow of gas. *G* is its armature; *H* the lever to which the armature is attached; *I* a standard supporting the lever *H*; *J* a pawl attached to the lever, and *K* a ratchet wheel on the cock *C*, with which the pawl *G* engages. *j* is a spring to remove the armature from contact with the poles of the electro-magnet, when the branch of the circuit in which the magnet is placed is open. *k* is an adjustable stop-screw to regulate the movement of the armature.

The inventor says: I do not confine myself to the particular method described of accomplishing my object.

But I *claim*, broadly, turning on or shutting off inflammable gas, by degrees, or gradually, through the agency of electricity, for such purposes as before alluded to.

No. 17,540.—DANIEL H. DEAN, of Lowell, Mass., assignor to WILLIAM T. COGGESHALL, of Fall River, Mass.—*Improvement in Fire-Grates or Linings of Fire-Pots*.—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Arranging the inner surface of each ring of the fire-pot cylindrically or vertically, the edges of the rings inclining inwards in such manner as to bring the upper edge of one ring on or about on a level with the lower edge of the ring directly over it, as described, whereby advantages such as are stated are gained.

No. 17,076.—SIMON BURGESS, of Wayne, Pa.—*Improvement in Cask-Heaters*.—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Combining with the fire-pot *B* the encompassing hearth *A*, with the adjustable pins *S*, for securing casks of different sizes in a concentric position, as set forth.

No. 18,026.—JOSEPH V. TIBBETS, of New York, N. Y.—*Improvement in Hot-Air Registers*.—Patent dated August 18, 1857.—By turning the handle of the screw rod *F* the valves *c d* may be adjusted and retained to any desired position, and thus the amount of air to pass through register *b* may be regulated.

The inventor says: I wish to be understood as not claiming a register with a valve for turning the heat, as such has been before essayed.

But I *claim* the valves *c d* placed in the ascending pipe *a*, at or near

the centre, with independent movements, as and for the purposes set forth.

No. 18,356.—SYLVESTER J. SHERMAN, of New York, N. Y.—*Improvement in Hot-Air Registers*.—Patent dated October 6, 1857.—In the drawings, fig. 1 is a cross section of the register, showing the spring bar with the fans closed. Fig. 2 is a cross section of the register, showing the spring bar with the fans partly open. E is the spring bar, which connects at 3 with the connecting rod, and at 4 with the top or face of the register. F is the knob or handle attached to the spring bar passing and working on the slot G. The spring bar terminates at the upper end in the plate 5, so as to more evenly slide against the under side of the piece having the slot in it. The spring bar should be made of steel, and thin enough so as to be elastic.

The inventor says: I *claim* interposing between the top plate of hot-air registers and the spring bar, to which the fans are attached, either directly or by means of a connecting rod, a slide plate, to which the end of the spring bar nearest to said top plate on one side, and the knob or handle on the other side, are permanently fixed, substantially as described.

No. 17,989.—WILLIAM WESTLAKE, of Milwaukie, Wis.—*Improved Tea Kettle*.—Patent dated August 11, 1857.—The air passes through tube B into the fire chamber c, supplying the fire in said chamber with air while the draught passes through holes b and out through the stove pipe, the chamber c being fitted in the top of the stove.

The inventor says: I am aware that tea kettles have been made having lateral pipes attached for the admission of gas as a fuel. An example is seen in Bogget & Pettit's patent, April 18, 1854. I do not claim such tea kettles. They are quite different in construction from mine; are used for a different purpose, and operate in a different manner. No air would enter through the fine apertures of their burners. My kettle forms a highly useful household article, and is not dependent for its operation upon a pressure of coal gas.

I *claim*, as a new article of manufacture, a tea kettle made as described.

No. 16,981.—A. H. KNAPP, of Medford, Mass.—*Improvement in Lamp-Burners*.—Patent dated April 7, 1857.—The air which passes through the perforations of the screen B partly supplies the outer draught through the aperture in the cap immediately around the outer tube, while the other portion, being carried through the apertures a in the said tubes, passes up the inner tube D, and out beneath the button H. The said button, by which the height of the flame is regulated, rests upon the rod G, which is raised or lowered by arm b playing in the eccentric slot of the cam d, which can be turned by its knob F.

The inventor says: I do not claim any one of the features described, separately considered.

But I *claim* the arrangement in a removable burner, so that it may

be applied to a common glass lamp, as described, of the perforated screen B, apertures *a a*, small column *c*, and cam *d*, provided with an eccentric slot, all arranged, combined and operating substantially as set forth, whereby I am enabled to produce a steady and even flame.

No. 18,307.—ISAAC SUGGITT, of Providence, R. I.—*Improved Hydrocarbon Vapor Lamp*—Patent dated September 29, 1857.—The nature of this invention consists in the upper part of the tube A, from which one or more arms or projections B are fitted about one inch below the top. The arms or projections are drilled hollow, and provided with a slit or aperture C for the escape of vapor to supply the flame, also with a slit or aperture D to receive the vapor from the tube in case the ends E of the arms or projections get stopped up with particles of cotton. A screwed or sliding cap is made so as to fit into the arms or projections B, when only one is required to burn. The upper part of the tube is made rough, and of some dark color, for the better radiation of the heat. S is a corrugated metal hoop to assist the escape of the vapor, and prevent the cotton charring too quick. T is a screwed cap to close the tube.

Claim.—The inventor says: I do not confine myself to place the arms B one inch from the top of the tube A, as when there is only one arm it requires to be a little lower than when two or more arms or projections are made. I do not claim a tube alone, but I claim a tube in combination with arms or projections B, and corrugated hoop S, substantially as set forth, to be used in any container or lamp suitable for the above purpose.

No. 18,818.—FRANCIS LECLAIR, of New York, N. Y.—*Improvement in Lamps*—Patent dated December 8, 1857.—A is the lamp reservoir; B is a wick extending to the gas generating chamber C; D is the heating flame tube; E is the thimble for regulating the heating flame; F is the handle for turning the thimble E to raise or lower it on the heating tube D; G is the plane for the handle to move on; H is a shield for protecting the heating flame; J is the common or bat-wing burner, which is readily lighted after a short time of action of the heating flames; L or M is the separate wick, independent of wick B.

The inventor says: I am aware that shields have been used for protecting the heating flame in some instances; I therefore do not claim the shield itself as new.

But I *claim* the shield H, constructed and arranged as described, so as to be held in its position by the screw G, and operating between it and the top *a* of the reservoir A, as set forth.

No. 17,086.—CHARLES A. GREENE, of Philadelphia, Pa.—*Improvement in Burners for Burning Fluid Lamps*.—Patent dated April 21, 1857.—The wick in the small tube E is, in the first instance, ignited, until sufficient heat is communicated to the conductor, the cap F, the burner G, and projection *g*, to generate a flammable gas from the fluid. This gas passes upwards through the passages *i* into the interior of the burner G, and passes through the slit on the top of the same. The gas being ignited, imparts sufficient heat to projection *g* to gene-

rate gas without the assistance of burner E. The brilliancy of the light can be adjusted by screwing or unscrewing cap F, and the extent to which the projection *g* enters the wick is thus increased or diminished.

The inventor says: I do not desire to lay any claim to the employment of a supplementary wick, in connexion with the lamps, or to the employment of plaster of Paris, or other non-conducting substance for surrounding the reservoir.

Neither do I desire to claim the exclusive use of a tapering spur for penetrating the wick.

But I *claim* the hollow burner G, with its rounded or hemi-spherical cap, and its projection *g*, when the whole is rendered adjustable to the main tube, in the manner and for the purpose set forth.

No. 16,398.—DAVID F. RANDALL, of Chicopee, Mass.—*Improvement in the Construction of Burning Fluid Lamps*.—Patent dated January 13, 1857.—The volatile fluid escapes in form of gas through the slit *d* of the gas-burner *c*, and the arms *g* of the spur spread the flame and heat the spur *f*, which latter, when heated, aids in vaporizing the fluid, producing a more intense light than that produced in a common gas-burner.

The inventor says: I do not claim combining with a burner a piece of metal to extend down into the body of a lamp for the purpose of fluidizing the combustible matter therein.

Nor do I claim combining with the wick of a burner a metallic tube to extend around said wick, and down into the burner tube, and to be capped with a button, for spreading the flame, the heat of said button and the tube extending immediately around the wick, serving to vaporize the fluid within the wick.

But I *claim* so applying to the gas-burner a tapering spur that it may extend down into the body of the wick, and serve to conduct heat into the interior of the wick while the external sides of the wick are heated by the burner and wick tube, as specified; and when such spur is used, I claim making it with one or more branches at top, as shown and described.

No. 16,852.—RUFUS W. SARGENT, of Philadelphia, Pa.—*Improvement in the Burner of Burning Fluid Lamps*.—Patent dated March 17, 1857.—The claim of the inventor and the engravings fully explain the nature of this invention.

The inventor says: I do not claim the burner tube, chamber A the arrangement of the main wick, or tube *a*.

I claim, 1st, the making of the chamber for the heating flame in lamps in which burning fluid, spirit gas, or other highly volatile fluid is used, so that it nearly or wholly surrounds the chamber in which the gas is generated, in order that the heating flame, being sheltered from the outer air and confined within the outer chamber, and in immediate contact with the inner chamber, may effect its purpose more steadily and with less consumption of fluid, the form of the outer chamber being substantially as above, and as represented in the annexed drawings.

2d. I claim surrounding the tube with a wick and packing, substantially as above described, in order to supply the heating flame with fluid, and the making of the burner tube with a flange and shoulder, as described, in order to afford space for said wick and packing, and the perforating the burner tube with apertures, through which said wick may be supplied with fluid.

3d. I claim the regulator, substantially as above described, moveable up and down upon the burner tube, in order to regulate and control the heating flame.

No. 16,379.—M. B. DYOTT, of Philadelphia, Pa.—*Improvement in Burning Fluid Lamps*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the thermo-insulation of the burner, as this has heretofore been done; but I *claim* removing the metallic connexion between the main burner A and auxiliary burner B of a fluid lamp so far from the flame or heat, and interposing a non or bad conducting material between the burner A and lighter B, as that the heat of the main burner shall not be transmitted to the auxiliary, whilst the efficiency of the latter is in nowise impaired substantially for the purpose and in the manner described.

No. 17,658.—HENRY WRIGHT ADAMS, of New York, N. Y.—*Improvement in Fountain Lamps*.—Patent dated June 30, 1857.—In carrying this lamp carelessly and tilting it, the overflows of the oil at the burner cup E is prevented by the oil in said cup sealing the passage a, which thus prevents the air from entering the reservoir A, and to get above the oil.

Claim.—Providing the burner cup with an internal cylinder or lining E to leave an open bottomed but close topped passage a a around the burner, in communication with the tube or passage D, coming from the fountain or reservoir, said internal cylinder or lining being provided with an opening c opposite the tube or passage D, substantially as and for the purpose specified.

No. 16,524.—J. S. BROWN, of Washington, D. C., assignor to JOSEPH KENT, of Baltimore, Md.—*Improvement in Lard Lamps*.—Patent dated February 3, 1857.—The brush of wires h h h serves to conduct the heat from the burning wick through the lard, and thus keep the latter liquid. When the wire brush has been removed for the purpose of filling the lamp, the ring d is pushed down, as represented in figure 2; the ring is then inserted into the neck a of the lamp, and the wire brush is pushed down, when the wires will again assume the position, figure 1.

Claim.—The loose ring d, in combination with the brush of wires, for the purpose set forth.

No. 16,825.—ISAAC N. COFFIN, of Washington, D. C.—*Improvement in Lard Lamps*.—Patent dated March 17, 1857.

The inventor says: I disclaim the arrangement of flat inclined wick

tubes at right angles to each other, that having been done by H. W. Revely.

But I *claim* the combination of the flat inclined wick tubes *a a* at right angles to each other, with the concave reflector *i*, as described, for the purposes mentioned.

No. 16,384.—LEWIS A. HAMBLIN, of Chicago, Ill.—*Improvement in Locomotive Lamps*.—Patent dated January 13, 1857.—The oil passes from the chambers A^1 and A^2 , through passages B^1 and B^2 , to the small central chamber *A*, to supply the burner *C*; by having the passages B^1 and B^2 not in line with one another, the oil will not be affected so much by the lateral motion of the engine, and an uniform feed will be effected.

The inventor says: I am aware that the reservoir or chamber of a locomotive lamp has been divided into a series of compartments by means of partitions, which extended from the top to near the centre of its depth, but this arrangement has been found not to accomplish the object desired, as a direct communication is necessarily left from end to end of the lamp below said partitions; and owing to this, as the oil is shot suddenly back and forth, that portion which is below the partitions rushes to one end of the lamp, and that above the bottom of the partitions falls into its place, and causes a too great and sudden pressure at the said end, and slopping or overflowing, and unsteady feeding to the burner are the results. Such an arrangement, therefore, I do not claim, as the same was patented to Irwin A. Williams on the 10th October, 1854.

But I *claim*, as an improvement on the said Williams' lamp, making a locomotive lamp with three or more distinct chambers $A A^1 A^2$, said chambers all being arranged on the same level, and connected by two tubes $B B^1$, which run parallel, but not in line with one another, and provided with two elevated vent passages *E E*, which communicate with the ordinary vent passages *D D*, substantially as and for the purposes set forth.

No. 16,769.—ISAAC CARLETON of Brooklyn, N. Y., assignor to JOHN WYBERD, of Baltimore, Md.—*Improvement in Reflectors for Locomotive and other Lamps*.—Patent dated March 3, 1857.—The object of this improvement is the protection of the metallic reflector *C* from atmospheric influence.

The inventor says: I make no claim to the passing of an air-tight tube through the reflector, separately considered, nor do I claim protecting the reflector, by a glass, conforming to its surface and hermetically sealed at the chimney openings and the rim of the reflector as shown in the patent of Alonzo Farron, dated April 14, 1844.

I *claim* the air-tight glass cylinder *B*, passing through the reflector, in combination with the glass *G*, hermetically sealing the mouth of the reflector, arranged and operating substantially as and for the purpose set forth.

No. 18,704.—WILLIAM PRATT, of Baltimore, Md.—*Improvement in Safety Lamps*.—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says : I do not claim any of the devices of others which I have referred to in the specification, or profess to be the discoverer of any of the principles involved in my own devices, separately considered.

But I *claim*, first protecting the orifices of vessels used in holding, pouring and burning inflammable liquids, with a volute of ribbed metal, wound upon itself, or made of strips of plain and corrugated metal wound together, these so formed making most economically a series of regular tubes of great stability and conducting power, together with freedom of pouring through them the liquids used, and also presenting great facility of cleaning from any accidental obstructions.

In claiming the above, I do not claim protecting such orifices with wire gauze, perforated metal cylinders or chambers, packages or masses of shot, pumice stone, or masses of tangled wire, or of wire packed longitudinally in tubes, as all these devices have been known before, but do not fulfil all conditions which my device does.

Second. I claim the arrangement of the feeder tube and cap, and the wick tubes and cap, either by the intersection of their peripheries or stops, suitably placed in such a manner that the removal of the wick cap cannot take place till that which covers the protected orifice for replenishing the lamp is first taken off.

No. 18,456.—WILLIAM KIMBLE, of New York, N. Y., and WILLIAM H. C. BARTLETT, of West Point, N. Y.—*Improvement in Shades for Lamps*.—Patent dated October 20, 1857.—This invention is for an improvement in the construction of glass shades for lamps, &c., and the object of it is to secure and concentrate in a horizontal direction all the rays projected above or below the radiant point.

In the engraving, the rays of light are shown as converging at B, but may be made to issue in parallel rays or diverging ones, according to the use the light is to be put. As the surfaces of the zones are polished, a portion of the light will necessarily be reflected ; this shows that a prominent feature in this invention lies in the direction given by these reflected rays, viz : by projecting them back upon the source of light, whereby they are all saved and serve to increase the intensity of the illumination.

The inventors say : We *claim* the described method of constructing a refracting light shade—that is to say, having its interior so shaped that all rays shall fall perpendicularly upon the receiving surfaces, in combination with an exterior refracting surface, by which only the rays shall be deviated into the required direction, substantially as described.

No. 17,507.—JOSEPH HASSELL, of Brooklyn, N. Y.—*Improvement in Solar Lamps*.—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says : I do not claim, separately, the elevating or depressing of the wick holder and its wick by turning the outer surrounding tube formed with a helix to act on a spring projecting from the wick-holder, and the wick-holder being prevented from turning

by a pin projecting from its inner periphery, fitting and sliding in a vertical groove formed in the outer surface of the inner wick tube.

I claim making the outer and turning wick tube *j*, which surrounds the wick holder *g*, with a helix or helices *l*, to act on a pin or stud *m*, projecting from the said wick holder, and preventing the said wick holder from turning by a feather or feathers *h*, or equivalents therefor, on the outer surface of the inner wick tube, substantially as described; in combination with the making of the upper end of the inner and outer wick tubes cylindrical and with unbroken surfaces in contact with the wick as described, the better to keep the upper end of the wick parallel with the upper end of the said wick tubes, and for the further purpose of having the surface of the said tubes where they are in contact or close proximity with the wick to present unbroken cylindrical surfaces as set forth.

And I also claim, in combination with the turning wick tube provided with a helix or helices, substantially as described, the employment of a movable nozzle, substantially as described.

No. 18,142.—JOSEPH G. GILBERT, of New York, N. Y.—*Improvement in Vapor Lamps*.—Patent dated September 8, 1857.—The conical cork D, having been pierced, is slid over the wick tube C; and the conical box E is slid over the cork D, and its base is soldered to the screw top B; the space G is then filled with melted sulphur, which, together with the cork, as nonconducting materials, will confine the heat to the wick tube.

The inventor says: I do not claim the use of cork alone, nor do I claim the outer cylinder, as they are both old devices; neither do I claim the form of the ring separately as a part of the heater or burner.

I claim the combination of the sulphur and cork, in the manner and substantially for the purposes set forth.

No. 18,719 —DEXTER H. CHAMBERLAIN, of West Roxbury, Mass., assignor to Himself and JOHN BORROWCASTLE, of Boston, Mass.—*Improvement in Vapor-Burning Lamps*.—Patent dated November 24, 1857.—In this improvement the wick tube is formed, as shown in the engravings, of a central or main portion 4, which is secured to the cap C at *a*, and extends down into the lamp nearly to the bottom of it; and of an auxiliary casing or chamber 5, which surrounds the part 4, and extends from the top of it nearly down to the cap C at *a*; this chamber 5 is filled with wick, a few strands being coiled in it up to the point *f* where it is joined to the part 4.

Claim.—The auxiliary chamber or casing 5, in combination with the tube 4, constructed and arranged in the manner and for the purpose set forth.

No. 17,637.—JOHN REESE and CHARLES N. TYLER, of Washington, D. C.—*Improved Lantern for Lighting Street Gas*.—Patent dated June 23, 1857.—In using this device the mouth of the shade D is entered into the funnel in the bottom of the gas lamp, and the burner C of the lighting lamp is pressed upward by means of handle G; the guard *e*, coming in contact with the valve which covers the aperture

in the bottom of the street lamp, opens it to allow the burner C to pass up far enough to ignite the gas. On withdrawing the burner the spring E on tube B forces the shade D over the burner, and the light is thus protected from being extinguished as the lighting lamp is carried from one place to another.

Claim.—The gas lighter described, consisting of the sliding shade D, spring E, and guard e, arranged and operating in the manner and for the purposes set forth.

No. 18,602.—JOHN R. PRICE and LEAVITT B. AUSTIN, of Oswego, N. Y.—*Improved Signal Lantern.*—Patent dated November 10, 1857.—The bottom of the lantern A is connected to the top C by the front bars D D and side plates E E, which, with the cross bars F F, form the frame of the lantern. The ears G G are fastened to the top C for the bail G¹, by which the lantern may be suspended. The hoop H surrounds the perforated chimney I, and is fastened to the top C by the brackets H¹, so as to break the force of the wind and prevent it from blowing into the chimney and extinguishing the light. The interior of the lantern is divided into three apartments by two horizontal partitions J J, opposite and fastened to the bars F F. These apartments may be provided with glass of different colors, so as to show light of the color required for the signal to be given.

Claim.—The combination of a traversing chimney and lamp so arranged as to avoid the bad effect of the lamp's smoke in signal lanterns, in the manner set forth.

No. 17,351.—WILLIAM G. RUSSELL, of New York, N. Y., assignor to WILLIAM SEWELL and WILLIAM G. RUSSELL, aforesaid.—*Combined Lantern and Oil Can.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim either a lamp or an oil can.

But in view of the new and useful result obtained, and the security for life and limb by my illuminated oil can, I *claim*, as a new article of manufacture, the attachment of a lamp or light to an oil can or feeder for illuminating the place to be oiled, substantially as and for the purposes specified.

No. 18,105.—JOSEPH H. ROHRMAN, of Philadelphia, Pa.—*Improvement in Lanterns.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. Constructing square frame lanterns with the corner uprights of square wire or metal rods, and the door frame of a single square wire or rod bent in U form, secured at its ends by a strip, the whole arranged as and for the purposes described.

Second. In combination with square wire corner uprights, the peculiar attachment of the guard wires d by simple grooves and dovetailed ends, as described, the whole constructed as and for the purposes set forth.

Third. Form ingtongues g in the bottom and top plates, or either,

for spring stops to secure the glasses in position, and also for the admission of air necessary to the combustion of the lamp flame, substantially in the manner set forth.

No. 18,784.—ABEL WILSON, of Philadelphia, Pa.—*Improvement in Gas-Lighting Lanterns*.—Patent dated December 1, 1857.—This invention relates to improvements in lanterns used by lamplighters for lighting gas, and consists in attaching to the top of the body, or casing of the lantern, a hollow perforated cone open at the top, and above the latter a hollow corrugated or other suitably formed cone.

The interior of the lantern communicates with the interior of the perforated cone, and the space between the two cones, and with the external atmosphere.

This invention has for its object the instantaneous lighting of gas, by simply holding the lantern in such a position with regard to the open burner, that the gas from the same may enter the openings between the two cones.

The inventor says: I wish it to be understood that although I prefer three corrugated cones, I do not desire to confine myself to that precise number or form of cones, as one cone only will serve the desired purpose, and as the cones may be made plain instead of corrugated.

But what I *claim* is surmounting the body or casing of the lantern with its hollow perforated cone C, in combination with the cone D, when the same are arranged and constructed substantially in the manner set forth and for the purpose specified.

No. 16,880.—ANDREW RALSTON, of West Middletown, Pa.—*Improvement in Pocket Lanterns*.—Patent dated March 24, 1857.—F is a sliding cap which can be closed down on the ring E when the lamp is not in use, or raised when in use; it is provided with wires *p* which pass through the openings in the ring E, and are bent at their lower ends so as to form eyes, made to slide on the wires *q*, the latter forming guiding rods for the cap F.

B is the cap of the lamp shown separately in the engravings; it consists of two disks *d* and *e*, of which the disk *d* has a longer diameter than the counter disk *e*; the centre portion of both is raised cone shape, so as not to touch or press on the end of the wick. They are riveted together in the centre, and a ring *f* of India rubber, or any other elastic substance, is firmly kept between them. The cap B is connected with the tube *b* by a hinge *g*; *h* is a spring which is hook-shaped at its upper end, and keeps the cap B firmly down when the lamp is not in use.

Claim.—The sliding cap F, the cap B, and the wick tube *a*, with its two rings or disks C C, arranged, combined, and operating in the manner set forth and described.

No. 17,696.—JOHN REESE and CHARLES N. TYLER, of Washington, D. C.—*Improvement in Street Lanterns*.—Patent dated June 30, 1857.—In lighting the lamp, the operator will turn the cock C by means of a key, and at the same time insert the burner of his hand lamp through the aperture D, by which the gas is ignited.

The inventors say : We do not claim the conical aperture or the valve in themselves.

But we *claim* the arrangement of the funnel-mouthed aperture D, and the valve F, in the bottom of the lamp, substantially as and for the purposes set forth.

No. 17,495.—JOHN CHILCOTT, of Brooklyn, N. Y.—*Improvement in Bakers' Ovens*.—Patent dated June 9, 1857.—The bread to be baked is placed in the pans G; these pans are supported by cars F, the three wheels of which run on suitable rails; the cars and pans revolve with the platform D; and each car having made one-half of a revolution, starting from door K, the wrist-pin *i** of crank *i* passes through the curved slot *v*, as represented at figure 4, thereby causing the pan G to tilt on its bearings *h*, and to discharge the loaves thereon.

The inventor says : I do not claim a continuously operating oven, as I am aware that endless chains have been employed in ovens to convey the bread from one part, where it is received, to another part, whence it is discharged, after having been baked during its travel from one part to the other.

Nor do I claim, generally, the employment within an oven of a horizontal rotating table, as I am aware that small ovens have been provided with such tables, to turn a loaf or other article placed upon them, from time to time.

But I *claim* providing each car by which the bread is conveyed to and from the oven with a pan or tray, that is hung upon journals, and is overturned at a suitable stage in the baking process by the automatic mechanical agency described, for the purpose of inverting the position of the bread, and thus causing the bread to be baked more uniformly.

No. 18,429.—HIRAM BERDAN, of New York, N. Y.—*Improvement in Bakers' Ovens*.—Patent dated October 20, 1857.—A full description of this invention would be too long for publication in this volume; we can therefore only state that, in using this improved oven, the dough is placed on trays or other suitable receptacles, supported on carriages, which are conveyed by upright endless chains through the oven, and it takes these carriages just so long a time to pass through as is necessary to effect the baking of the bread. The oven doors are also made to open and shut, and the carriages introduced into and withdrawn from the oven automatically at regular and proper intervals. The heat of the oven is maintained at a uniform degree.

Claim.—The inventor says : I claim the employment in an oven of a system of endless chains, in connexion with other machinery, arranged and combined substantially as described, for the purpose of introducing dough, or other material to be baked, into the oven, keeping the same in motion therein, and delivering the same therefrom when baked.

No. 17,666.—J. H. CHESTER, of Cincinnati, Ohio.—*Improved Portable Steam Radiator for Heating Apartments*.—Patent dated

June 30, 1857.—The boiler C is filled about one third with water through pipe D, and placed over a gauze gas-burner; in a few minutes the water will boil, the steam ascending in a straight column until, striking the deflector B, it is deflected to the right and left, thoroughly heating the lower corners, and, passing around the ends of the deflectors, ascends to the steam chamber above; and, as the air-cocks should be open, the cold air is expelled, and the steam-chamber filled with steam. The steam, on ascending, condenses on the inner surfaces of the radiator, giving out its heat, and descends to the boiler to be reconverted into steam.

The inventor says: I do not confine my claim to gas as the only means of heating the portable radiator, but intend to use any method of heating to secure the object as set forth.

I claim the portable radiator A, constructed with plain inner surfaces, the deflector B, boiler C, and tube D, all constructed and arranged substantially as and for the purposes set forth.

No. 16,459.—WILLIAM BENNETT, of New York, N. Y.—*Improvement in Radiators for Fireplace Grates and Franklin Stoves*.—Patent dated January 27, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the perforated plate described in the patent issued to S. S. Savage, October 28, 1856.

Neither do I claim the use of wire gauze and perforated metal dampers in any form located in the flues of stoves or throats of chimneys, nor the gas apparatus of A. Bruce.

But I claim a perforated metallic plate or radiator, filling the fireplace with a flange of indefinite depth, and resting upon the fuel directly or upon the top bar of the grate, and against the fire back, in such manner that the whole shall come below the flue of the stove or throat of the chimney in which it is used, leaving the passage for the cold air to the chimney flue free and unobstructed, constructed and arranged substantially as and for the purpose set forth.

No. 17,456.—CHARLES J. SHEPARD, of Brooklyn, N. Y.—*Improvement in Cooking Ranges*.—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a metallic conductor between the fire and oven, as the same has been used in the form of a separate block on which the fire brick rested; but I am not aware that the side plate of the oven has ever before been formed with the thickened part at the point of curvature in said plate as specified, whereby the direct heat of the fire (which would cause burning) is intercepted, and the whole plate is heated by the conducted heat, which would not be the case if the plate and conductor 2 were in separate pieces; and by this means the oven is enlarged and rendered more efficient.

I claim forming the plate *m* that encloses the whole side of the oven next the fire, with the conductor and radiator 2, substantially as and for the purposes specified; whereby the said radiator 2, in contact with the fire, conducts the heat to and disperses the same throughout the side

oven plate *m*, heating the oven more uniformly and preventing burning, at the same time that the oven is enlarged as specified.

No. 18,055.—SAMUEL PIERCE, of Troy, N. Y.—*Improvement in Cooking Ranges*.—Patent dated August 25, 1857.—The current of air passes over the partition *h* through space *s*, so that the natural draft of the bottom flue *g* will aid in creating a current in the space between the ovens *o* and *o'*, and the circulation will be thus made complete and cause the ovens to bake alike on every side.

Claim.—The combination of the recess *p* between the ovens, having a division plate therein open at the top, with the bottom flue, as set forth, so as, by the action of the draft of said bottom flue, to cause a circulation in said recess *p*, in the manner and for the purpose described.

No. 17,259.—JOHN G. BROWN and JOHN P. DERBY, of South Reading, Massachusetts.—*Improved Apparatus for Roasting Meat*.—Patent dated May 12, 1857.—The meat being secured to spit *G*, it can be held in any desired position by means of pawl *P*; by pressing down handle *F* the pawl *P* is removed from the ratchet *K*, and spit *G* can be turned by turning handle *H*.

The inventors say: We do not claim the use of a wheel with a socket attached, on or into which wheel a band or gears run, for the purpose of turning the spit, a device of that kind having before been used in the application of clock machinery, which is moved by a spring or weight.

Neither do we claim the various parts of the devices named, separated and disconnected from each other.

We claim a new article of manufacture, consisting of a pan with the handles *A a*, sockets *B B*, the removable standards *E e*, ratchet wheel, pawl, and spit for a roasting apparatus, all arranged and operating as described.

No. 18,241.—EDMUND GIBBS, of Madison, Wisconsin.—*Improvement in Steam-heating Apparatus*.—Patent dated September 22, 1857.—This invention is of the nature of a stove, the upper part of which is arranged with boiler pipes and steam chambers set over a gas burner fixed in a cylinder supported on a basis with feet; this lower part, with the upper part, forming an upright cylindrical stove suitable for heating purposes in any apartment.

This stove, says the inventor, is arranged for a single gas burner, because it is more economical to use two stoves, when more heat is wanted, than to increase the size or burners for one stove.

The inventor claims the boiler *E*, with its trough *F*, operating in combination with the coil of pipe *O*, and its prongs *P* and *Q*, or their equivalents, arranged for the purpose specified.

No. 17,750.—CHARLES B. SAWYER, of Fitchburg, Massachusetts.—*Improved Air-heating Stove*.—Patent dated July 7, 1857.—The cold air enters the stove through pipe *D*, and becomes heated in passing through the hot air flue *F*, and the heated air passes through pipes *I*

into the rooms to be heated. The cold and vitiated air from the lower part of the rooms will pass through pipes J into chamber C, and up through chamber H into pipe *g*. In case the temperature of either room becomes too high it may suddenly be lowered by opening the damper of pipe K, which will admit a volume of pure cold air.

The inventor says: I do not claim the hot air pipes I, hot air flue F, ventilating flue G, and air-heating chamber A, provided with cold air pipe D, for these arranged, as shown, have been previously used and patented by John Sawyer.

Nor do I claim either of the parts described separately.

But I *claim* the pipes K for the admission of cold air direct into rooms when said pipes are made to pass through the ventilating chambers G for the purpose of creating the necessary draught, as described and arranged, and used in connexion with the hot air pipes I and ventilating pipes J, as shown.

I also claim the chamber H placed over the hot air flue F and ventilating chamber G, when arranged relatively with the flue F, chamber G, and pipes *a g*, as shown for the purpose specified.

No. 18,321.—HIRAM CARSLY, of Lynn, Mass.—*Improvement in Stove Cover Stands*.—Patent dated October 6, 1857.—The objects to be accomplished by this invention are: To have a suitable receptacle for the covers of a cooking stove or range, while the holes to which they belong are being used; to have it so constructed as to be convenient to take the covers from and replace them with the common removable or other similar handles; to have it so constructed as to be easily taken apart and closely packed for transportation; to sufficiently protect the floor, stove, top of covers and other articles with which the covers are liable to come in contact with from smut, &c., and so as to require but little material in the manufacture. The drawings and claim give the best idea of the construction of this invention.

Claim.—The inventor says: I claim the improved stove cover screen composed of a series of shelves, each provided with the space *a*, and arranged in combination with the relatively enlarged and flanged base *b*, substantially in the manner and for the purposes set forth.

No. 17,767.—PATRICK MIHAM, of Boston, Mass., assignor to ROBERT B. FELTS, of the same place.—*Improved Gas Stoves*.—Patent dated July 7, 1857.—The gas enters the case E by pipe E, and the burner C is also supplied with an outer current of air which passes up through air conductor *c*. The flame passes up against the inverted bottom F, by which the heat is disseminated towards the sides of the oven and finally escapes through flue *c*.

Claim.—The combination and arrangement of the deflector *f*, with the conical or tapering cap *b*, the gas receiving case E, and the air passage *e*, the whole being substantially in manner and so as to operate as described.

Also, the combination and arrangement of the perforated open tube or conductor G, and the secondary top H, with the oven, substantially as specified, and so as to operate therewith and not only improve its

baking powers, but render it capable of applying heat to a kettle or other article placed in or on said part or tube G, as specified.

No. 16,538.—GEORGE W. GARDNER, of Troy, N. Y.—*Improvement in Shaker-Bars of Stove-Grates*.—Patent dated February 3, 1857.—The inner end of bar E plays between two pins *g g* on the circular grate B, which latter is thereby caused to revolve about its centre *a*.

Claim.—The shaker-bar E, with the fulcrum *f*, or its equivalent, as described, for the purpose of revolving the grate without the usual slot in the stove, and confining the ashes in the stove, as set forth.

No. 17,756.—JAMES SPEAR, of Philadelphia, Pa.—*Improved Railroad Car Stove*.—Patent dated July 7, 1857.—When the cars are in motion a current of air is forced into the tube H, raising one of the valves *a c*, and the air striking the top of furnace A passes down through space C and enters the car through openings *m*. When the car is at rest, the air enters the furnace through openings *m*, and becomes heated in passing up through space C, and escapes into the car through openings *n*.

The inventor says: I am aware that cars have been heated by a current of air caused by their motion, and admitted through the top of the car to a heater inside; but this I do not claim.

But I claim the combination of the cross tube H and its self-acting valves *a* and *b*, with the air tube E, so constructed and arranged as to conduct the external air to the heater when the cars are in rapid motion, either forward or backward, and to prevent the escape of the heated air when there is no descending current, as specified.

No. 17,483.—ASA BLOOD, of Norfolk, Va.—*Improved Steam-Heating Stove*.—Patent dated June 9, 1857.—The water to be converted into steam passes through pipes S into the chamber N, thence through pipe *b* into flue H¹, in the direction of the arrows; thence into chamber E¹; up pillar H into chamber L¹; then down pillar H², through chamber E; up pillar H¹, pipe *a*, tube M¹, and finally escapes through pipe R. The condensed water is collected in pipe *a*¹ and escapes through pipe R¹.

Claim.—The arrangement of the water chamber N, chambers E and L¹ and *o*, pillars H, H¹, and H², hollow grates and tubes R and R¹, as set forth.

No. 16,423.—LOTTIS WOOD, of New York, N. Y.—*Improvement in Stove Thimbles or Deck Irons*.—Patent dated January 13, 1857.—The inner pipe A and outer cross pipe B are united on their lower ends, they being made of one piece of cast iron. This deck iron is inserted in the deck of the vessel and fastened to it by means of flange C, and the stove pipe passes through the inner pipe A; the space between the two pipes being filled with water, thus insulating the stove pipe.

The inventor says: I do not claim the mode or process of casting described, though I believe it to be, in some respects, new.

I claim the deck iron described, constructed substantially as set forth, irrespective of the mode or process of casting.

No. 18,434.—WILLIAM T. COGGESSHALL, of Fall River, Mass.—*Improvement in Stove and Furnace Grates*.—Patent dated October 20, 1857.—This improvement is described by the engraving and claim.

Claim.—The inventor says: I lay no claim whatever to applying the grate to its drawer slide in such manner as to enable said grate to be either turned horizontally or tipped laterally, such not being my invention.

But I claim a new mode of combining the grate A with its drawer slide B, viz: by a supporting annulus C, separate from and arranged on the slide, and made to support the grate, substantially as explained; my invention affording a clear ash space under the grate, while it secures the advantage of allowing the grate to be either tipped laterally or to be turned or vibrated horizontally, as occasion may require.

No. 17,235.—HENRY SEITZ, of St. Mary's, Va.—*Improvement in Close or Open Stoves*.—Patent dated May 5, 1857.—The parts being in position as represented in full lines, this stove operates like an open grate stove; but when the plates O N Q B are moved in the position marked in dotted lines, and upon the apertures between the grate bars *a* being closed by bars *i*, the stove is transformed into a perfectly tight stove. The cold air from the room passes through openings *e* of the plates *b*, and thence through openings *p* into passages J; and in passing up said passages it becomes heated, and escapes through openings *d* into the room. By opening the register K warm air will be admitted on the upper surface of the fire, and all smoke will be consumed.

Claim.—The arrangement in a grate of the plates O N Q R, supplementary grate bars *i*, dust flue S, air heating chambers X X I, and passages J J, when the whole are disposed as shown, for the purpose set forth.

No. 17,283.—JNO. C. KELLER, of Philadelphia, Pa.—*Improvement in Coal Stoves*.—Patent dated May 12, 1857.—The air passing through the aperture D passes half around the cylinder P, through the chamber J, and entering groove L, the oxygen of the air is brought in contact with the carbonic acid of the fuel in the fire chamber A by the tubes K, upon which combustion takes place causing jets of flame to extend some six inches above the openings in the upper ends of tubes K.

The inventor says: Stoves provided with the hole D, chamber J, and perforations in the cylinder P some four inches below its top, are well known. I therefore do not claim the parts to which the letters D J and P refer.

But I claim the arrangement of the perforations D and O in the cylinders B and M situated opposite to each other, so that the current of air entering D shall be divided and heated by passing half around the cylinder M previous to entering the groove L through the perforation O, in the manner substantially as described.

No. 17,510.—JOHN B. KOHLER, of Philadelphia, Pennsylvania.—*Improvement in Coal Stoves*.—Patent dated June 9, 1857.—When the opening *m* is closed by lip *n* on the disk W, the products of combustion must pass through the openings *m*¹ *m*² into the chambers M¹ and

M^2 , thence, through openings $p^1 p^2$, into the space between the casings B D, on one side of the partitions q , thence through the orifices r , returning through the space between the same casings, but on the opposite side of the partitions, to the chimney I. When the projection n is removed from the opening m , the products of combustion, instead of taking the circuitous route, will pass off direct to the chimney. The air to be heated passes through orifices d into the space between the casings C and D, thence through openings t, t^1 , and t^2 , into the chamber N, N^1 , and N^2 , thence, through corresponding openings u and a grating V, to the room to be heated.

Claim.—The three cases B, C, D, the fire chambers M, M^1 , and M^2 , and their respective openings, the air chambers N, N^1 , and N^2 , with their openings, and the partitions q and q^1 , when the whole is arranged and constructed substantially in the manner and for the purpose set forth.

No. 17,919.—J. A. DAVIS, of Syracuse, New York.—*Improvement in Coal Stoves.*—Patent dated August 4, 1857.—When the damper D is closed, the draught caused from the openings v descends downward through the fire which is on grate H, and, entering the bottom of the flues e , passes up through said flues, thence downward through flues M and up through flues N and out at pipe B.

The inventor says: I do not wish to be understood as claiming the downward draft, as that is well known.

But I *claim* the combined arrangement of the shallow fire-box G, constructed as described, flues M M and N N, and dampers D and C, the whole constructed and operating as described.

No. 18,362.—WILLIAM H. STINSON, of Baltimore, Maryland.—*Improvement in Coal Stoves.*—Patent dated October 6, 1857.—This invention consists in fitting within a common fireplace a suitably shaped head or cowl covering the throat of the chimney, the sides or jambs of the hearth peculiarly constructed, somewhat after the manner of the Franklin or Pennsylvania fire-place, heating a current of air derived either from within or without the room in which the stove is placed, as the exigencies of the temperature may require, and by suitable devices dividing the current of air in such a manner that it shall necessarily pass over a great amount of heating surface, and the heating surface so arranged that it shall facilitate the passage of heated air into the room. The drawings and claim will give the reader an idea of this improvement.

The inventor says: I make no claim, broadly, to the heating of rooms by means of currents of air introduced from without, and circulating in chambers or passages around a stove situated within the fire-place.

Neither do I claim the introduction of cold air from without into a fire chamber, and thence into the room in a heated state, as these devices are well known in the Franklin stove and the stove of Feinour.

Neither do I claim the construction of a stove with a vacant space around the stove, closed in front, except the space between the cylinder and sides, the heated air being forced out between the cylinder and sides, as in the stove of Latrobe, as these devices fail of effecting

the purposes which are perfectly fulfilled by my invention, viz: the control of the source from whence the cold air is derived, the dividing and passing it over a great amount of heating surface, and, by the arrangement of the air passages, aid its flow into the apartment in such volume and temperature as, while it is sufficient to warm the room, is not so heated as to vitiate its quality while the radiated heat is thrown to the front of the stove, rendering it warm to the feet.

Neither do I claim, broadly, and as separate devices, the various parts, as described, and forming my stove, as these parts have been before and variously applied.

But I *claim* the arrangement of the air passage E, the division plate or partition H, and the inclined flue D, with its corresponding air passage F, made, combined, and operating substantially as described.

No. 18,469.—D. CHRISTIAN RAUB, of Davenport, Iowa.—*Improvement in Coal Stoves*.—Patent dated October 20, 1857.—This invention relates to a stove for burning coal, or other material which packs down in the fire-box, and requires a regulated quantity of atmospheric to promote proper combustion under all its conditions. This invention consists more especially in the means by which the draft is regulated, being intended to promote uniform combustion, and an economical dissemination of heat.

The inventor says: I *claim* in combination with the fire-box D and its grates D¹, and perforated or slotted cone C, the slides F F² F³ F⁴ arranged and operating in connexion therewith, substantially in the manner and for the purpose set forth.

No. 16,455.—JOHN G. TREADWELL, of Albany, N. Y.—*Improvement in Cooking Stoves*.—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—In stoves with elevated ovens, having an escape flue below the elevated oven and none below it; the construction and arrangement of the damper *c d*, so that by turning it in one direction, it shall compel the flame and smoke to pass around the oven, and by turning it in another, may shut off the flame and smoke entirely from the oven, substantially as set forth and described.

No. 17,100.—THOMAS KING, of West Farms, N. Y.—*Improvement in Cooking Stoves*.—Patent dated April 21, 1857.—When the dampers T T¹ U are open, the products of combustion rise from the fire-pot A in the direction of the arrows, pass between the plates G N along the sides *e* of box G, under the edges of sides *e* and up through box Q into the escape flue R. When the damper U is closed the opening between the bottom of box Q and flue P is cut off, and the products of combustion, instead of passing under the edges of sides *e* of box Q, pass down into flue P, thence into flue K, where they spread and divide rising through flues L into flue O, thence into box Q, escape through flue R. The dampers T serve to throw all the heat to one or the other side of the stove.

The inventor says: I do not claim broadly the surrounding of the oven in stoves with hot air flues.

Nor do I claim the regulation of the draught of stoves by the admission of cold air into the escape flue, although I consider that my improvement is more perfect in these respects than other stoves.

I claim the arrangement and combination of the box Q, register or pot-hole S, and flues O P K and L L, all constructed and operating as set forth.

No. 17,371.—JOSEPH HACKETT, of Louisville, Ky.—*Improvement in Cooking Stoves*.—Patent dated May 26, 1857.—By turning upwards knob *m*, the bars *k* can be raised so as to pass out from between the lugs *n*; and the dampers *b b*¹ are raised, and the openings *a a*¹ are closed.

The inventor says: I do not claim an oven with flues leading to flues in the door.

Neither do I claim operating the dampers by the opening and closing of the door.

But I claim the employment, in combination with the dampers of the oven and doors, of a rising and falling catch bar which has a turning knob, which is so arranged that in turning it shall rise over an inclined plane or stationary stop on the door, substantially as and for the purpose set forth.

No. 17,748.—WILLIAM RESOR, of Cincinnati, O.—*Improvement in Cooking Stoves*.—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The described combination, with a customary reverting flue cooking stove, of the funnel shaped descending flues *d d*¹, enclosing a reverberatory chamber E communicating with the central or reverting flue *g* on one side of a supplemental oven, and with the escape flue *h* on the other side, substantially as described and for the purposes set forth.

No. 18,012.—SIDNEY GODLEY, of Lockport, N. Y.—*Improvement in Cooking Stoves*.—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of the stove A with the movable adjusting plate M, which is one of the entire sides of the stove; and detaching it for a cover to the baker B¹ when the same is used with stove A; the whole when arranged forming a complete cook and baker, as set forth.

Second. The adjustable extension chamber B to be attached to stove A, when it is desired to extend its cooking and heating capacity, the stove A being a complete stove with or without the attachment as set forth.

No. 18,586.—JAMES R. HYDE, of Troy, N. Y.—*Improvement in Cooking Stoves*.—Patent dated November 10, 1857.—The engravings and claim explain the nature of this improvement.

Claim.—The inventor says: I wish it distinctly understood, that I do not broadly claim so constructing a stove that heated atmospheric air can be admitted at the same or at different times into the fire-chamber, at different places above or beyond the fuel, from one or both

of two separate air-heating chambers, by the use of the dampers by which the admission of cold air into such air-heating chambers is controlled, for the purpose of promoting the combustion in different parts of the fire chamber of the gases evolved by the burning fuel.

I claim the arrangement of the hot-air chambers A, B, and C, the chambers A and B being so constructed that the air can be admitted to or excluded from them, entirely independent of the chamber C, by means of the registers c and E, and being provided with apertures a and b, in the manner and for the purpose specified.

No. 18,737.—RENSSELAER D. GRANGER, of Philadelphia, Pa.—*Improvement in Cooking Stoves*.—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim—The inventor says: I do not desire to claim exclusively the dividing of the lower flue for the products of combustion.

But I claim, as an improvement in the stove for which a patent was granted to me on the 1st of March, 1848, forming underneath the oven a chamber through which a current of cold air, entering at the rear of the stove, may pass into the space between the back of the fireplace and front of the oven, when the said chamber serves the purpose of dividing and dispersing the products of combustion as they pass through the lower flue to the chimney.

No. 18,859.—SAMUEL PIERCE, of Troy, New York.—*Improvement in Cooking Stoves*.—Patent dated December 15, 1857.—The claim and engraving explain the nature of this invention.

Claim.—Equalizing the heat of an oven heated by a surrounding flue of hot air, by interposing between the fire chamber and that portion of the oven contiguous thereto an air chamber, or flue, *m w*, interior to the main flue *i*, between said main or exterior flue and the oven, so as to shield that part of the oven from the intense heat of the exterior flue at that point, and thus equalize and diffuse the heat over the whole surface of the oven, as fully set forth.

No. 18,024.—P. P. STEWART, of Troy, New York.—*Improvement in Bakers for Cooking Stoves*.—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The employment of the plate or pan *a*, with its legs *b*, to rest on a stove plate, its projecting wires *c* at the angles to guide the reflector F, and its aperture or slot *d* in the middle of the length, in combination with the tin reflector enclosing the whole and leaving a space all around, which, together with the slot in the middle of the plate or pan, will permit the heat radiated from the stove plate to be reflected on to the top of the articles to be baked or roasted; all substantially as specified.

No. 18,297.—SAMUEL PIERCE, of Troy, N. Y.—*Improved apparatus for Roasting on Cooking Stoves, Ranges, &c.*—Patent dated September 29, 1857.—The inventor, in describing his improvement, says: I form a bright tin kitchen somewhat in the shape of the ordinary article before in use, the difference being that I bring a curtain of tin in front

at *a*, to the bottom, instead of leaving it open ; at that point I insert a spit in the usual way at *b*, and under it is the usual dripping pan arrangement *d*, beyond which a space is left between said dripping pan and the front curtain *a*, as seen in the drawing. The roaster is furnished with handles and door for basting, as other articles of similar character.

Claim.—The inventor *claims* the construction and arrangement of the apparatus as specified, for the purpose of combining with a range or stove for the purpose of roasting, as set forth.

No. 16,349.—DANIEL S. BEARDSLEY, of Hew Haven, Conn., assignor to JOHN D. UMBERFIELD and DANIEL S. BEARDSLEY.—*Improvement in Ships' Cooking Stoves.*—Patent dated January 6, 1857.—The smoke and sparks from the fire chamber pass from the hollow pivots *a* into the flue *b* ; upon these pivots the stove swings forward and back in the frame *c*. This frame is composed in part of the flue *b*, and swings laterally on the pivot *d* and the hollow pivot *e* resting in the chimney.

Claim.—Hanging a stove, to be used on ship-board, by means of the hollow pivots and flue, as described, so that the stove shall always maintain an upright position, and the draft not be interrupted.

No. 17,578.—JOHN W. LEFFERTS, of Brooklyn, N. Y.—*Improvement in Foot Stove.*—Patent dated June 16, 1857.—The perforated plate *d* serves to distribute or spread the heat, and as the draught passes through the opening *F*, the top plate *h* will be evenly heated.

Claim.—The lamp *D*, fitted or placed within the cylindrical chamber *C* of the box *B*, the lamp being constructed in annular form, so as to have a passage *b* through its centre to feed the flame within, and the box *B* fitted within the case *A*, the box *B* being provided with the perforated or reticulated plate *d*, plate *e*, with passages *f*, and draught pipe *g*, the whole being arranged substantially as described for the purpose specified.

No. 18,580.—SAMUEL FISHER, of Canton, Mass.—*Improvement in Stoves for Burning Tan, Sawdust, &c.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—The inventor says : I do not claim combining with a fire pot or place an air flue or chamber for air to pass through and over the fuel, when the fire pot or chamber has a grate, and a current of air passing up through the grate and the fuel on the same, for in my stove there is no grate, and an upward current running through the entire mass of fuel would consume the fuel too fast, and render the stove liable to explode.

But I *claim* an improved stove of the kind and for the purpose as described or as constructed, not only with a fuel chamber, without a grate or air passage or passages through its bottom, but with an air chamber arranged in front of the chamber of combustion, and made to communicate therewith, and the external atmosphere and the side flues, whereby air can be supplied laterally to the chamber of combustion, and made to pass over the same and down into the flues, such air not only supporting slow downward combustion of the fuel, but

serving to create draft down the flues, so as to carry off the smoke and combustible gases, and prevent explosion of the stove.

No. 16,939.—GEORGE W. THOMPSON, of Bordentown, N. J.—*Improvement in Stoves for Railway Cars*.—Patent dated March 31, 1857. When the car is in motion the air enters the stove through the hood J, and passing down through pipe I it opens the valve *v*, which depresses lever *h* and levers *j* and *j'*, thereby bringing the valves *l* and *l'* in contact with the under side of cap B and closing the perforations in the same, and the heated air is discharged into the car through the openings *b*. When the car stops valve *v* is closed, and the cold air enters through the openings *b*, and the heated air escapes through the openings in cap B.

Claim.—The balanced valve *v*, as hinged to the interior of the pipe I, in combination with the lever *h*, levers *j* and *j'*, their disk *l*, and the perforations in the cap B, the whole being arranged and constructed substantially in the manner and for the purpose set forth.

No. 17,608.—PATRICK MIHAN, of Boston, Mass., assignor to Himself and ROBERT B. FITTS, of the same place.—*Improvement in Gas Stoves*.—Patent dated June 16, 1857.—The gas enters the annular pipe G, and the atmospheric air enters through passages *a'*, both are mixed and ignited at the outside of the wire gauze I; the flame passing up in the space F, and heating the air which is outside the stove and inside the radiator *c*, while the spent gases are discharged down the radiator K and pipe M.

The inventor says: I do not claim arranging a gas distributing tube and an air and gas mixer between two concentric surfaces provided with air inlets arranged so that air may pass with gas through the perforations of the mixer or cap only, as my arrangement involves something more than this.

Neither do I claim an annular gas burner arranged between two radiators, and having passages for air to pass between it and each radiator, and to the flame that may be generated above the exit holes of said burner, as I employ an air and gas burner, and not a mere gas burner.

Nor do I claim simply making the air and gas mixer or cap in a conical form, nor do I claim combining with a gas burner an ascending and descending flue, one being concentric with the other, and whether the descending flue is either within or without the other.

Nor do I claim the construction of gas stoves as described on pages 86 and 87 of Webster's Encyclopædia, my invention differing essentially therefrom.

I *claim* arranging an annular gas distributing tube G, a perforated or wire gauze mixer I, two radiators C and D, an air space within the radiator C, and air inlet spaces B E, the one leading air above, and the other below the surface of the mixer, substantially as described, this arrangement involving, inclining the gas mixer I, and the radiator C, in opposite directions with respect to one another substantially as described.

I also *claim* the arrangement of the secondary radiator K, and its discharge tube M, with reference to the radiator C, the open air space

within the latter and the chamber F, and the air and gas burning apparatus, disposed at the bottom of said chamber, as specified.

No. 17,771.—THOMAS WATERS, of Boston, Mass., assignor to Himself and STEPHEN SHERLOCK, of Eastport, Me.—*Improvement in Gas Stoves*.—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the main chamber of combustion B, its air and gas burner or burners C, and the auxiliary chamber of combustion D, made to communicate (by one or more passages F) with the main chamber B, and having pipes E extending through the chamber B, and arranged so that air in passing through the said pipes may be heated by the heated products in the chamber B, as specified.

Also the air and gas burner G and supply pipes H, in combination with the main and auxiliary chambers of combustion B and D, made to communicate with each other, as specified.

Also the combination of the reverberating bell or dome K, with its auxiliary chamber D, and the main chamber B, when furnished with burners, and connected with one another and the external atmosphere, as specified.

No. 16,607.—LUTHER M. PARSONS, of Waukan, Wis.—*Improvement in Ventilating Stoves*.—Patent dated February 10, 1857.—The fire is fed with the vitiated air from near the ceiling of the room by means of tubes H. Pure outside air is introduced into the stove by means of tube G; and when sufficiently warmed in its passage around the fire chamber A, it enters the room. At a certain temperature the expansion coil α^1 will operate lever K, closing pipe H, and opening pipe d to conduct off superfluous heat or vitiated air.

The inventor says: I do not claim separately the pipes H, bent pipe J, bar K, with its valves e, and expansion spiral rod α^1 ; for these separately, or in themselves considered, have been previously used.

But I *claim* the arrangement of the pipes H, bent pipe J, bar K, provided with valves e, and the expansion rod α^1 , as shown and described, for the purpose specified.

No. 18,868.—H. G. SEEKINS, Sr., & H. G. SEEKINS, Jr., of Elyria, N. Y.—*Improvement in Feet Warmers*.—Patent dated December 15, 1857.—The nature of this invention consists in constructing a hydrocaloric foot stool, with separate compartments; one of which is filled with heated water and tightly corked; one of the others is designed for common atmospheric air; the other or outer compartment is filled with any non-conducting substance, the object of which is to prevent the absorption or escape of heat through the sides or bottom of the apparatus, and to retain the heat until it has passed through the top of the reservoir.

The inventors say: We do not claim the reservoir, the air chamber, or the non-conducting compartment.

But we *claim* the reservoir A, with a flange e, having perforations c c, which shall correspond with the perforations ff in the flange F, in the manner and for the purpose set forth and described.











